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AUGUST, 1892.

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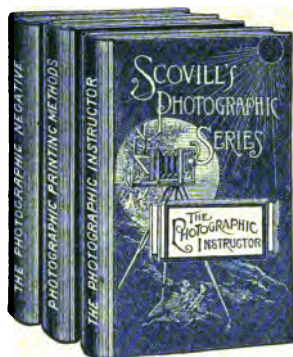
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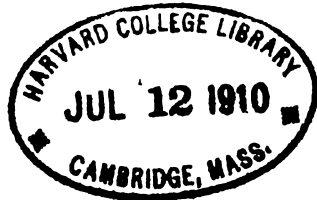
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OF

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NEW YORK:
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HOW TO MAKE PHOTOGRAPHS.

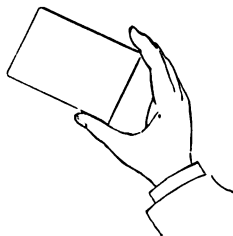
IT is not difficult to become an expert photographer. Any one of average intelligence may easily acquire all the skill necessary to make good technical photographs; and after that it is largely a matter of taste and judgment. Let the beginner buy his outfit of a reliable firm, and not attempt too much at first.



The various styles and grades of cameras, etc., with prices, are explained in the pages which follow, so it is only necessary for us here to consider briefly the actual steps required to make a finished photograph.

And first, we must fill the plate-holders with dry-plates or, if a roll-holder is used, we must insert the reel of sensitive films preparatory to actual work in the field. This must be done in the dark-room. Any room or closet from which all rays of white light are excluded will answer. At night one's own bed-chamber will serve for a dark-room. A ruby lantern furnishes the proper quality of light.

If dry-plates are used, open a package and carefully place them, one at a time, in the holders, sensitive (not the glossy) side outward. Handle the plates as shown in the cut, and be careful not to

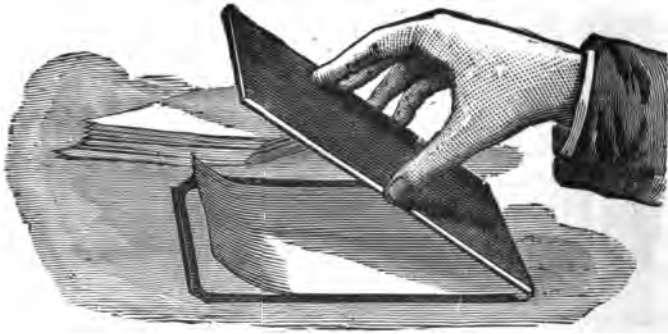


injure the sensitive film. Dust plate-holder and plates carefully with a camel's-hair brush before filling.

Sensitive films are sold on reels, which may be easily inserted in the roll-holder, as shown in the cut.



They may also be exposed in film-carriers, and there are special holders, very thin and light, for carrying the New Keystone Films. At first, however, it is much better for the



amateur to use glass plates. Later he may advance to the more recent methods.

Having filled our holders with dry-plates let us venture afield in search of the picturesque.

On selecting a desirable view we set up our camera on its tripod and proceed to focus. This is done by moving backward or forward the ground glass under the black focusing cloth until the image reflected appears perfectly sharp in all its details. Of course the picture is inverted, but the eye soon becomes accustomed to that. When focus is obtained affix the

plate-holder carrying the dry-plates to the camera and cap the lens.

Decide how long an exposure is necessary to sufficiently impress the plate, and then draw the slide from the holder. Uncap the lens and count the time, or note it on the watch dial. Then re-cap and insert the slide. Reverse the holder, and we are ready for the next exposure. The length of exposure varies with the subject and the other circumstances, such as light-force, time of day and year, sensitiveness of plate, and rapidity of lens. But practice soon makes perfect in this matter as in all others.

Lens	Morrison C. Group
Stop	$\frac{1}{14}$
Exposure	$\frac{1}{2}$ second
Plate	Keystone Special
Subject	Riverside Park

A record may be taken of the exposure on the patent registering slides supplied with the Scovill holders.

When all the plates are exposed we may return to the dark-room and develop them. The developing outfit comprises the following articles: Two glass trays, a 4 ounce



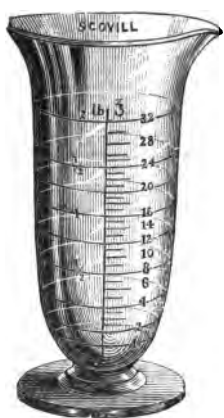
The Developing Outfit.

glass graduate, a minim graduate, a ruby lantern, a bottle of S. P. C. negative varnish, 1 dozen dry-plates, an ounce

of bromide of potassium, a pound of hyposulphite of soda, 1 pound of alum, and a package of S. P. C. pyro and soda developer.

Some amateurs send their exposed plates to a professional photographer for development and printing, but it is better to at least develop one's own negatives even if the prints are afterwards made by a professional.

Take a plate from one of the holders and place it first, film side up, in a tray of pure water. While it soaks there prepare the developer.



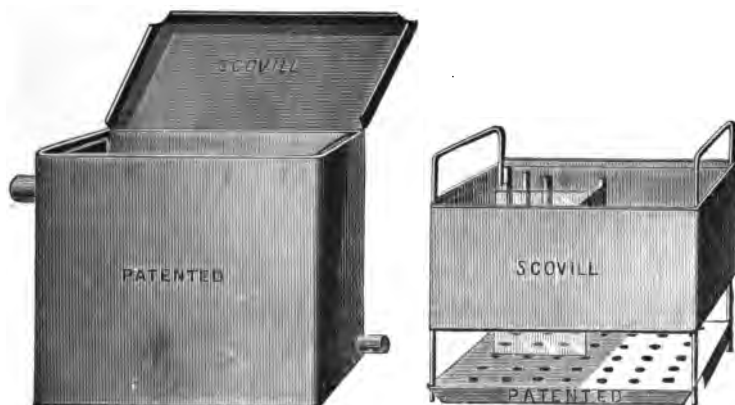
Graduated Glass.

In the graduate put 1 ounce of water and 1 dram each No. 1 and No. 2 S. P. C. Pyro and Soda developer. Now pour off the water from the tray, and flow over the plate the combined developing solution. If air-bubbles form on the plate they must be removed by a touch of the finger or by a soft camel's-hair brush. If the plate be correctly exposed traces of the image will appear on the sensitive film in a short time, but in case they do not come, pour the developing solution back into the graduate and add a little more of the No. 2 solution and reflow the plate with the strengthened developer. In a short time the image will appear, but wait patiently until all the details are out and clearly seen in the deep shadows, and until the milky-white appearance of the plate is changed to a dark gray color. The negative is then fully developed. Wash it in two changes of water and it is ready for the "fixing" bath.

Should the image on the plate flash out suddenly on flowing it with the developing solution, and continue to grow very rapidly, the plate has been over-exposed and must be quickly removed from the developing tray and placed in pure water, while a restraining solution of bromide is made as follows: Dissolve 1 ounce of bromide of potassium in 9 ounces of water, and label "Bromide solution." Add a few drops of the bromide solution to the developing tray and replace in it the partly developed plate. The development will proceed more

slowly ; but if by an excess of bromide solution the process of developing has been too much retarded, it can be started again by adding carefully a little more of the No. 2 solution.

In the unused tray mix a solution of 4 ounces of hyposulphite of soda and 20 ounces of water. Label this tray "Hypo" *and do not use it for any other purpose*. After washing the negative place it in the hypo bath and allow it to remain there until every vestige of the milky-white appearance has vanished. The negative can then be safely examined by white light. It must be thoroughly washed, however, as the hypo-



Negative Washing Box.

sulphite of soda, if allowed to remain in the film, will crystalize and destroy the negative. A negative washing box will be found to be of great assistance.

Meanwhile rinse out the first tray and partially fill it with a solution of alum, two tablespoonfuls of the coarse alum powder to sixteen ounces (or a pint) of water. Allow the plate to remain in this bath about five minutes and then thoroughly wash it again and set it on edge to dry in a negative rack or in the drying support, as shown in the cut.

The Russell Negative Clasp is also convenient for holding the plate during development and obviates the necessity of putting one's hands into the developing solution.

After the negative is thoroughly dried it is sometimes varnished, but this is not absolutely necessary, especially where only a few prints are desired from the plate. Before applying the varnish to the gelatine plate it should be slightly warmed to expel all moisture.



The Russell Negative Clasp.



We are now ready to print. The printing and toning outfit consists of a printing-frame, a glass pan, a vulcanite tray, some ready sensitized paper, a bottle of French azotate, a bottle of chloride of gold and sodium, a glass graduate, some hyposulphite of soda, a glass form, a Robinson trimmer, some sheets of fine card-board, a jar of parlor paste, and a bristle brush.

The printing process is simple. Ready-sensitized paper before being printed upon requires a preliminary preparation, that of fuming in the vapors of ammonia. The wooden box in which the printing materials are packed is so constructed as to serve as a fuming-closet. See label on box. After the

paper has been exposed to the ammonia vapors for thirty minutes it is ready for the printing frame. Lay a piece of the sensitized paper face downward upon the face of the negative



The Printing Outfit.

which rests in a frame. Close the back and secure it firmly by means of the springs. Then carry the frame to a place where the sunlight can fall upon it and leave it there until the picture is clearly seen. It



The Scovill Printing-Frame.

should appear a little darker than the finished picture is desired to be, for the subsequent processes of toning and fixing bleach the print considerably. When the desired number of prints are made we are ready for the "toning" and "fixing" processes.

Prepare a toning-bath sufficient for the number of prints to be toned. Dissolve the contents of the bottle labelled chloride of gold and sodium (fifteen grains by weight) in fifteen ounces of water, and label the

bottle, "Chloride of Gold Solution." Take one ounce of French azotate, one and one-half ounces of the chloride of gold solution, and add six ounces of water, and we have a toning-bath which works well. First, wash the prints in several changes of water, and add to the last a little of saturated solution of common washing soda. Then take seven ounces of the toning solution and change the prints to the pan containing it. Here they should be turned over and over to ensure even toning. The toning process should go on until the dark part of the pictures have a very faint purplish tint and the white portion is clear. Then wash the pictures, but preserve the toning solution.

The pictures should now be left for twenty minutes in a solution composed of four ounces of hyposulphite of soda, to which a few drops of ammonia may be added. This solution should be prepared a day or two in advance. It "fixes" the prints. Give the pictures a final and effectual washing. After they are dried, lay them out one by one and, using the trimmer,



Trimmer.

cut them to the desired size. Now spread over the back of each print, in turn, some Parlor paste and lay them down on sheets of cardboard or in an album; this is called mounting. Lay a piece of brown or white paper over the print and rub upon it with a paper-cutter or flat ruler from centre to edges until the print lies perfectly flat on the mount beneath.

The prints are now ready for burnishing, but this is not necessary, and in the opinion of many does not add to their artistic value.

The mounting may be done in any light, but the toning process should be conducted in a dark or dimly-lighted room and the prints should be kept in a box or drawer where the strong light will not reach them until ready for the toning process.

Further and more explicit directions for making photographs and descriptions of the latest and most advanced methods and branches of photography may be obtained by reading "THE PHOTOGRAPHIC INSTRUCTOR," by W. I. Lincoln Adams and Prof. Charles Ehrmann ; also "THE PHOTOGRAPHIC NEGATIVE" and "PHOTOGRAPHIC PRINTING METHODS," both by the Rev. W. H. Burbank. (See list of The Scovill Photographic Series.)



The title is enclosed in a rectangular frame with an ornate, repeating floral or scrollwork border. The text "THE PHOTOGRAPHIC TIMES." is centered within the frame in a large, serif, all-caps font. The word "THE" is smaller and positioned above "PHOTOGRAPHIC".

THE PHOTOGRAPHIC TIMES.

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It is published by the Photographic Times Publishing Association, at 423 Broome Street, New York City, and the annual subscription price is five dollars.



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The Scovill Manufacturing Company was founded in Waterbury, in 1802, and has been engaged in the manufacture of metals and metal goods since that early date. As photography grew in popularity, and the demands for the necessary supplies increased, the department of the Scovill Manufacturing Company devoted to this branch of the business became more important, and it was apparent that the child had outgrown the necessity for the care of the parent organization. The Scovill & Adams Company was thereupon organized, and began its career as an independent firm, January 1, 1889. It was really an enlargement of the Photographic Department of the Scovill Manufacturing Company managed as an independent company. Mr. W. Irving Adams, who had been the agent managing this department, became the President of the new company, and the management continues as heretofore.

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 - 1 Ruby Lantern,
- 1 Rubber Focus Cloth,
 - 1 Package Carbutt's 4 x 5 Dry Plates,
 - 1 Package Sensitized Paper,
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1 Scovill Double Dry Plate Holder (Reversible), with *patent Registering Slides*.

1 Taylor Improved Folding Tripod.

1 No. A "Waterbury" Achromatic Lens, with *revolving diaphragm*.

1 Carrying Case.

5 x 7 Favorite Outfit, - - - - - Price, \$12.00

FAVORITE OUTFIT B, price \$12.00, comprises



A FAVORITE VIEW CAMERA, to produce pictures 5x8 inches, with *vertical shifting front, single swing movement*, rubber bellows and folding platform, with *patent latch* for making bed rigid instantaneously; also

1 Scovill Double Dry Plate Holder (Reversible), with *patent Registering Slides, and with Kits*.

1 Taylor Improved Folding Tripod.

1 No. B "Waterbury" Achromatic Lens with *revolving diaphragms*

1 Carrying Case.

FAVORITE OUTFIT C, price \$18.50, comprises



A FAVORITE VIEW CAMERA, to produce 5x8 inch pictures, with *vertical shifting front, single swing movement*, rubber bellows and folding platform, with *patent latch* for making bed rigid instantaneously.

This Camera is constructed so as to make either a *Picture* on the full size of the plate (5 x 8 inches), or by substituting the extra front (supplied with the outfit) and using the pair of lenses of shorter focus, it is admirably adapted for taking *stereoscopic* negatives. Included in this outfit are also

- 1 Scovill Double Dry Plate Holder (Reversible), with *patent Registering Slides, and with Kits.*
- 1 B "Waterbury" Achromatic Lens, *with revolving diaphragms.*
- 1 Pair "Waterbury" Achromatic Matched Stereoscopic Lenses.
- 1 Taylor Improved Folding Tripod.
- 1 Carrying Case.

FAVORITE OUTFIT D, price \$15.00, comprises

A FAVORITE VIEW CAMERA to produce pictures 6½x8½ inches, with *vertical shifting front, single swing movement*, rubber bellows and folding platform, with *patent latch* for making bed rigid instantaneously; also

- 1 Scovill Double Dry Plate Holder (Reversible), *with patent Registering Slides, and with Kits.*
- 1 Taylor Improved Folding Tripod.
- 1 No. BB "Waterbury" Achromatic Lens *with Revolving Diaphragms.*
- 1 Carrying Case.

FAVORITE OUTFIT E, price \$25.00, comprises

A FAVORITE VIEW CAMERA to produce pictures 8x10 inches, with *vertical shifting front, single swing movement*, rubber bellows and folding platform, with *patent latch* for making bed rigid instantaneously; also

- 1 Scovill Double Dry Plate Holder (Reversible), *with patent Registering Slides, and with Kits.*
- 1 Taylor Improved Folding Tripod.
- 1 No. C "Waterbury" Achromatic Lens *with revolving diaphragms.*
- 1 Carrying Case.

EQUIPMENT A-A-A.—Price, \$20.00.

Complete in every Requisite for making the Highest Class Pictures.

LACKING NOTHING FOR VIEW TAKING, DEVELOPMENT AND THE PRINTING
AND MOUNTING OF PHOTOGRAPHS.

Consisting of *Favorite Apparatus* Outfit A.....\$10 00
Also 1 *Developing* Outfit 4 x 5 (see page 8)..... 5 25
" 1 *Printing and Toning* Outfit, 4 x 5 (see page 9)..... 4 87

5 x 7 FAVORITE EQUIPMENT, \$24.00.

EQUIPMENT B-B-B.—Price, \$24.50.

Complete in every Requisite for making the Highest Class Pictures.

Consisting of *Favorite Apparatus* Outfit B.....\$12 00
Also 1 *Developing* Outfit 5 x 8 (see page 8)..... 6 50
" 1 *Printing and Toning* Outfit 5 x 8 (see page 9)..... 6 38

EQUIPMENT C-C-C.—Price, \$30.00.

Complete in every Requisite for making the Highest Class Pictures.

Consisting of *Favorite Apparatus* Outfit C.....\$18 50
Also 1 *Developing* Outfit 5 x 8 (see page 8)..... 6 50
" 1 *Printing and Toning* Outfit 5 x 8 (see page 9)..... 6 38

EQUIPMENT D-D-D.—Price, 28.00.

Consisting of *Favorite Apparatus* Outfit D....\$15 00
Also 1 *Developing* Outfit 6½ x 8½ (see page 8)..... 7 00
" 1 *Printing and Toning* Outfit 6½ x 8½ (see page 9)..... 7 00

EQUIPMENT E-E-E.—Price, \$40.00.

Consisting of *Favorite Apparatus* Outfit E.....\$25 00
Also 1 *Developing* Outfit 8 x 10 (see page 8)..... 8 50
" 1 *Printing and Toning* Outfit (see page 9)..... 8 50

4 x 5 Hand Camera Developing and Printing Outfit.

- 1 4 x 5 Glass Pan.
- 1 4 x 5 Glossy Rubber Tray.
- 1 4 x 5 Japanned Tray.
- 1 Package S. P. C. Hydrochinon Developer.
- 1 Pound Hyposulphite Soda.
- 1 W. I. A. Ruby Lantern.
- 1 Package 4 x 5 Keystone Eclipse Dry Plates.
- 1 Two-ounce Glass Graduate.
- 1 Dozen 4 x 5 Omega Paper.
- 1 Package Omega Toning Solution.
- 1 " Primrose Cards, No. 9.
- 1 Jar Parlor Paste.
- 1 Paste Brush.
- 1 4 x 5 Printing Frame.
- 1 Copy "The Knack" (a book of simple instructions).

Price, complete.....\$5.00

SCOVILL'S

Pure Chemicals & Accessories

FOR MAKING NEGATIVES.



We offer for use with any Outfit to make pictures 4 x 5 inches, the following goods packed securely in a wooden case :

4 x 5 DEVELOPING OUTFIT.

- | | |
|-----------------------------------------|---------------------------------|
| 1 pkg. S.P.C. Carbonate Soda Developer, | 1 lb. Alum, |
| 3 4 x 5 Glass Pans, | 1 bot. S.P.C. Negative Varnish, |
| 1 4 oz. Graduate. | 1 doz. 4 x 5 Dry Plates, |
| 1 Minim Graduate, | 1 Scovill Focusing Cloth, |
| 1 oz. Bromide Potassium, | 1 Ruby Lantern, |
| 1 lb. Hyposulphite Soda, | 1 Adt Manipulator. |

PRICE, COMPLETE, \$5.25.

For use with any Outfit we supply the same goods, with the exception of the substitution of Pans and Plates for the size ordered.

PRICE, 5 x 7 DEVELOPING OUTFIT \$6.35.

- | | | |
|-----------|---|---------|
| " 5 x 8 | " | " 6.50. |
| " 6½ x 8½ | " | " 7.00. |
| " 8 x 10 | " | " 8.50. |

S. P. C.

Outfit for Printing, Toning, Fixing and Mounting 4 x 5 Pictures.

- | | | |
|----------------------------------------|-------------------------|------------------------------------|
| 1 4x5 Flat Printing Frame. | Price complete, \$4.57. | 1 Bottle S. P. C. Toning Solution. |
| 2 4x5 Glass Pans. | | 2 Dozen Collins' Cards. |
| 2 Dozen 4x5 S. P. C. Sensitized Paper. | | 1 Jar Parlor Paste. |
| 1 Two-ounce Graduate. | | 1 Bristle Brush. |
| 1 Pound Hyposulphite Soda. | | 1 4x5 Glass Form. |
| | | 1 Straight Trimmer. |

Securely packed in a box, which serves also for a fuming box.



S. P. C.

Outfit for Printing, Toning, Fixing and Mounting 5 x 8 Pictures.

This outfit is like the one on preceding page, but with Printing Frame, Glass Tray, Sensitized Paper, and Card-board adapted for 5 x 8 Pictures.

Price complete, \$6.38. Securely packed in a Paper Box.

6½ x 8½ Printing and Toning Outfit. Price, \$7.00.
 8 x 10 " " " " 8.50.

WATERBURY OUTFITS,

With Double Film Holders, or with Glass Plate Holders.



THE WATERBURY CAMERAS are made of mahogany, and well polished, have rubber bellows, folding platform, *patent latch* for making bed rigid instantaneously, single swing, vertical shifting front, and are as light and compact as substantial cameras can be constructed.

4x5 Waterbury Outfits, Complete.....\$12 00

CONSISTING OF

- 1 Single Swing Camera, described above.
- 1 Light Weight Double Dry Holder, with *Patent Registering Slides*.
- 1 Wooden Carrying Case.
- 1 Improved Taylor Tripod.
- 1 No. A Waterbury Lens *with Revolving Diaphragm*.

LATEST SIZES INTRODUCED	{	4½x5½	Waterbury Outfit, complete	.....\$13 00
		4½x6½	" " "	..... 14 00
		5x7	" " "	..... 16 00

5x8 Waterbury Outfits, Complete.....\$16 50

CONSISTING OF

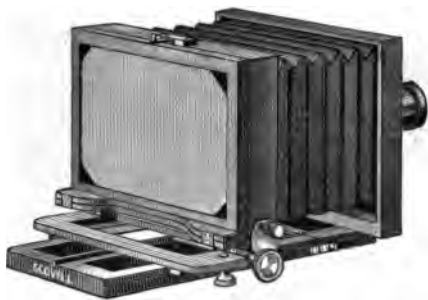
- 1 Single Swing Camera, described above.
- 1 Light Weight Double Dry Holder, with *Patent Registering Slides*.
- 1 Wooden Carrying Case.
- 1 Improved Taylor Tripod.
- 1 No. B Waterbury Lens *with revolving diaphragm*.

6½x8½ Waterbury Outfits, Complete.....\$20 00

CONSISTING OF

- 1 Single Swing Camera, described above.
- 1 Light Weight Double Dry Holder, with *Patent Registering Slides*.
- 1 Wooden Carrying Case.
- 1 Improved Taylor Tripod.
- 1 No. BB Waterbury Lens *with revolving diaphragm*.

Elite View Outfits



AN ELITE VIEW OUTFIT COMPRISES:

One Single Swing Mahogany-polished Camera, with vertical shifting front; Rubber Folding Bellows and Rack and Pinion Focusing Adjustment.

By means of the side plate the Camera may be reversed when vertical views are desired. To this Camera, which is very light and compact, is fitted one of the incomparable Light Weight Holders, with Patent Registering Slides. The Outfit also comprises

A SCOVILL EXTENSION TRIPOD,

A WATERBURY ACHROMATIC LENS,

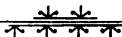
WITH REVOLVING STOPS,

AND A CARRYING CASE.

PRICE LIST IS AS FOLLOWS:

Size of View.	
4½ x 6½	\$17 00
5 x 7	17 50
5 x 8	18 00
6½ x 8½	22 00

The Flandreau Outfits.



THE Flandreau Camera folds up in so compact a form that the smaller size may be carried in a large overcoat pocket. In fact it embodies the advantages of the Scovill Tourist Camera, with much that is new and improved. The rods which are used to move forward the front of the camera are nicely adjusted, and are polished and nickel-plated, so that they add to the handsome appearance of the camera, and contrast well with its polished mahogany surface and the dark hue of its bellows. In addition to this portable arrangement, the Flandreau box is reversible, has a liberal swing back and front and rising front board. The bellows is cone shaped, and focuses by the forward movement. When closed for carrying the box becomes a closing front board which is firmly secured at the top by a spring. The tripod head is fastened to this board so that, in adjusting, all that is necessary is merely to lower the front and fasten the tripod legs to the top, which is already secured beneath the board. The swing is held in any position by a new and very clever device. The ground glass is hinged, as in English cameras, to throw over the top of the instrument

4 x 5 Flandreau Outfit consists of 4 x 5 Flandreau Camera, with

- 1 Daisy Double Dry Plate Holder, with *Patent Registering Slides*.
- 1 Scovill Adjustable Tripod No. 1.
- 1 Canvas Carrying Case.

Price, complete, \$20.00.

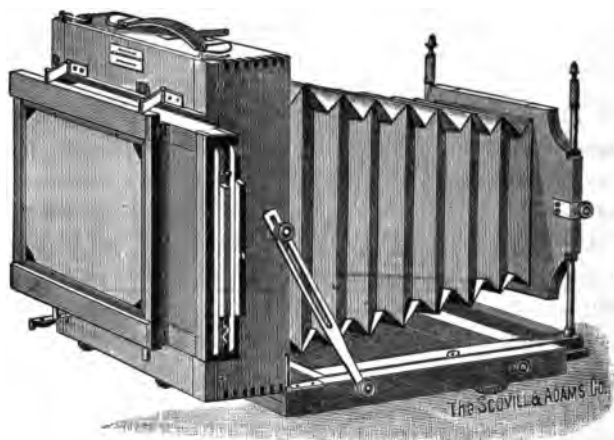
6 x 7 Flandreau Outfit consists of 6 x 7 Flandreau Camera, with

- 1 Daisy Double Dry Plate Holder, with *Patent Registering Slides*.
- 1 Scovill Adjustable Tripod No. 2.
- 1 Canvas Carrying Case.

Price, complete, \$25.00.

— THE —

COMPACT VIEW OUTFITS.



These Outfits comprise a Compact View Camera—which is a polished mahogany box—with patent reversible swing-back, with turn-table on platform, and with raising front which can be set back on platform when Camera is used with a short focus lens.

One canvas Carrying Case for Camera.

One Scovill Adjustable Tripod.

PRICE LIST.

5 x 7 Compact View Outfit.....	\$20 00
5 x 8 “ “	22 00
6½ x 8½ “ “	25 00
8 x 10 “ “	30 00

Centennial Outfits.

(Introduced in 1876.)

CENTENNIAL OUTFIT No. 202, price \$22.00, Consists of
A MAHOGANY POLISHED CAMERA for taking pictures 4x5 inches, with
Folding Bellows Body, single swing, hinged bed, and brass guides. It
 has a vertical and horizontal sliding front, with
 1 Daisy Double Dry Plate Holder, with *Patent Registering Slides*; also
 1 Canvas Carrying Case.
 1 No. 1 Scovill Extension Tripod.

CENTENNIAL OUTFIT No. 202, with Optimus
 Instantaneous Lens.....price **\$32.00.**

CENTENNIAL OUTFIT No. 202 A.....price \$24.00,
 The same as No. 202, but with Camera for taking pictures 4½ x 6½ inches.

CENTENNIAL OUTFIT No. 202 B.....price \$26.00,
 for pictures 4½ x 6½ inches.

CENTENNIAL OUTFIT No. 203, price \$30.00, Consists of



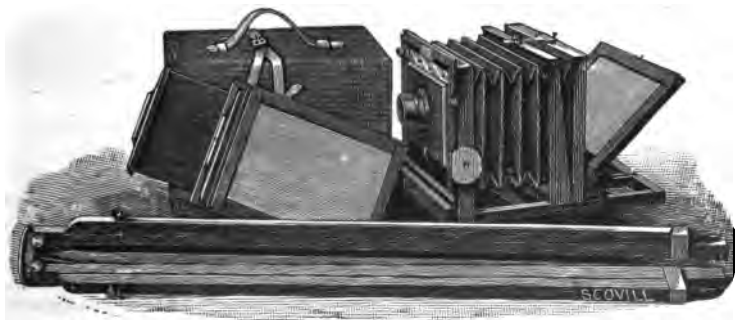
A FOLDING MAHOGANY CAMERA, well
 known as the '76 Camera (see illustration). It is adapted for taking 5 x 8
 inch pictures, and also for stereo-
 scopic views—together with

1 Daisy Double Dry Plate Holder, with
Patent Registering Slides; also

1 Canvas Carrying Case.

1 No. 1 Scovill Extension Tripod.

CENTENNIAL OUTFIT No. 204, price \$36.00, Consists of



A FOLDING MAHOGANY CAMERA of finest style and finish for taking 6½ x 8½
 inch pictures, with

1 Daisy Dry Plate Holder, with *Patent Registering Slides*; also

1 Canvas Carrying Case.

1 No. 2 Scovill Extension Tripod.

**For Developing and Printing Outfits to be used with the above, refer to
 page 7.**

OUTFITS FOR LADIES.

PETITE OUTFIT, consisting of $3\frac{1}{4} \times 4\frac{1}{4}$ Single Swing Petite Camera, made of mahogany, polished, with folding platform, patent latch for ditto, double dry-plate holder with registering slides, one jointed adjustable tripod, one $3\frac{1}{4} \times 4\frac{1}{4}$ Optimus Instantaneous Lens. Price, complete.....\$25.00. When sold separately the total cost of the parts of this outfit is \$36.00.

MIGNON OUTFIT, consisting of $3\frac{1}{4} \times 4\frac{1}{4}$ Mignon Camera, made of mahogany, finely polished, with folding platform, patent latch for ditto, rack and pinion focusing adjustment, double dry-plate holder with registering slides, one jointed adjustable tripod, one $3\frac{1}{4} \times 4\frac{1}{4}$ Optimus Instantaneous Lens. Price complete.....\$36.00. When sold separately the total cost of the parts of this outfit is \$48.00.

THE PETITE CAMERA.



This camera was made to suit the refined taste of one of Vassar's fair students. The design on the part of the manufacturers was to reduce the impedimenta for an outing to the minimum, providing a $3\frac{1}{4} \times 4\frac{1}{4}$ camera (to make negatives of suitable size for lantern slides), with single swing, folding bed with *patent latch*, vertical shifting front, and other desirable improvements. So well has the design been carried out that many ladies will follow the example of Vassar's pupils, and learn the fascination of picture-taking with one of these finely-polished mahogany cameras. Gentlemen in search of a pocket camera need not seek further. The Petite Camera and an enlarging camera will by many be considered a satisfactory and complete equipment for such photographing as they desire to do.

PRICE.

Petite Camera with one double Dry-Plate Holder, and *patent Registering Slides*.....\$13 00
 Same Camera with canvas bag, with shoulder strap and Scovill's Adjustable
 (feather weight) Tripod.....17 00

Albion Cameras.



THE following illustrations and description are given to assist in determining the choice of those who want a camera that is "quite English, you know."

TURN-TABLE.



ALBION CAMERA OUT OF CASE (FOLDED).

The Albion Cameras are provided with the Scovill turn-table, whose excellence is due, not only to the fact that it has an open center into which the lens projects, thus doing away with the necessity of unscrewing the lens every time the front board of the camera is turned down in order to fold the camera, but what is of equal importance, the bearings of the turn-table are so nicely adjusted, that

they do not become clogged at any time—a defect in all imported cameras. There is also no need of a regulator or fastener for this turn-table. In whatever direction the camera is turned it remains until moved by the photographer. The extreme accuracy and nicety of the working of the Scovill turn-table can only be fairly appreciated when tried.

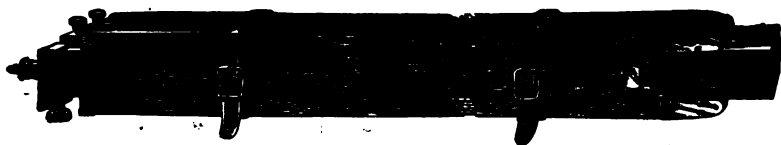
COMPACTNESS. Before passing from the Scovill turn-table, it is well to bear in mind that serving as a tripod top, it does away with the necessity of any other, and the bothersome tripod screw. In the highest degree, compatible with the requisite strength, the Albion Camera is compact and portable.

CARRYING CASE.



CANVAS BAG FOR ALBION CAMERA.

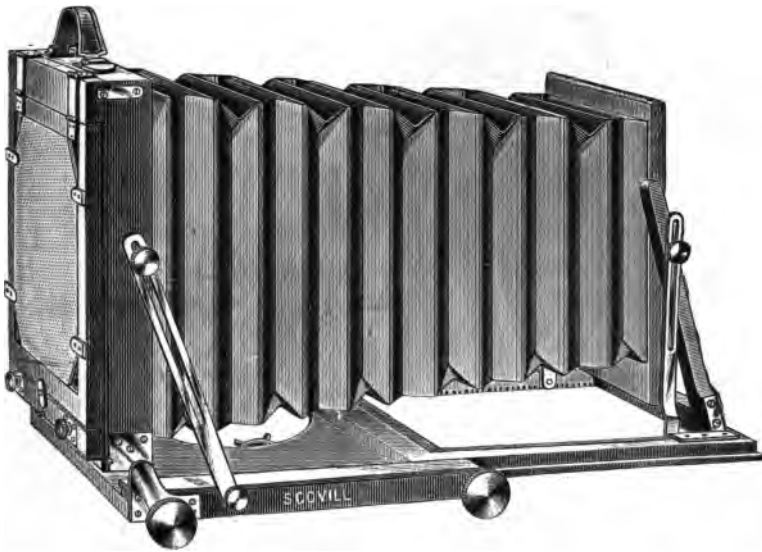
A glance at the fine carrying case provided for the Albion Camera is sufficient to convince one of its compactness. This case is lined with the best canton flannel, and has a leather partition to separate the camera from the holder.



ALBION TRIPOD.

ALBION TRIPOD. While folding compactly, as here shown, the Albion Tripod is readily extended and firm enough to support, without vibration, a 10x12 view camera. The binding straps are attached to one of the legs, so that they are always there when wanted.

The Albion Camera has the Howe patent reversible back, is arranged for double swing and a single swing front, and, when used with the **SHIFTING FRONT**, the extreme possibility of tilting is attained. The tallest towers must come down to the ground-glass screen, which, in common with all cameras of the English pattern, is hinged so that it may throw over the top of the camera or behind the holder when that is in use.



ALBION CAMERA EXTENDED.

The cut showing the Albion Camera partly folded, and the one showing the great length of platform when the extension bed is fully drawn out, really make extended comment unnecessary, but it will not do to pass by so lightly the DOUBLE PLATE HOLDERS fitted to the Albion Camera. All of the imported English holders (double backs, "you know"), warp when subjected to the severe test of our climate, and the slides refuse, without provocation, to move.

We have not or do not propose to imitate them, but fit the Albion Cameras with double holders, which we guarantee not to warp, and we put in them our patent Registering (Record) Slides.

The marked superiority of the Albion Cameras over any and all styles of English make will be more apparent on examination, or, better still, through using one of them.



ALBION CAMERA AND TRIPOD.

PRICE-LIST OF ALBION CAMERAS.

Each with Albion Tripod and Extra Fine Canvas Carrying Case.

No.	550— $4\frac{3}{4}$ x $6\frac{1}{2}$	Size,	- - - - -	\$47 00
"	551—5 x 7	"	- - - - -	48 00
"	552—5 x 8	"	- - - - -	49 00
"	553— $6\frac{1}{2}$ x $8\frac{1}{2}$	"	- - - - -	50 00
"	554—8 x 10	"	- - - - -	60 00

Prices of Albion Tripods and Extra Holders on pages 44 and 48.

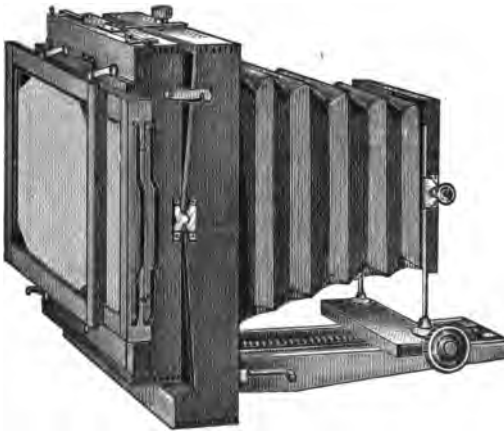
AMERICAN OPTICAL CO'S

Star View Cameras.

(PATENTED.)

The Star Reversible Back Cameras have the patent reversible back, with automatic latch, which allows Holder to be inserted without holding back the ground-glass frame, the rack and pinion movement, and the *patent latch* for making the bed rigid instantaneously.

Each Camera is supplied with one Daisy Holder with *patent Registering Slides* and canvas case.



STAR REVERSIBLE-BACK CAMERAS.

No.	For View.	Single Swing-back.		Double Swing-back.	
No. 110—	4 x5	\$25	00	\$29	00
" 111—	4½x5½.....	26	00	80	00
" 112—	4½x6½.....	30	00	84	00
" 113—	5 x7	32	00	85	00
" 114—	5 x8	34	00	88	00
" 115—	6½x8½.....	36	00	40	00
" 116—	8 x10	40	00	44	00
" 117—11	x14	60	00	64	00

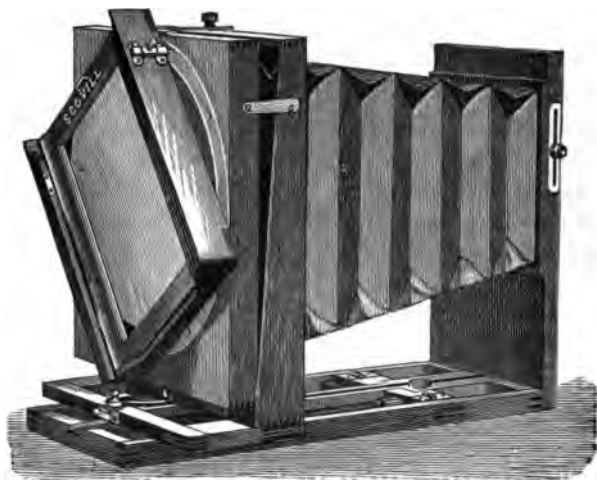
Not made above 11x14 size.

Canvas cases to contain Camera with more than one Holder made to order at extra price.

REVOLVING-BACK CAMERAS.

(PATENTED.)

Each Incased in a Canvas Bag, with Handle.



(BACK FOCUS PATTERN.)

"These are the finest View Cameras ever constructed," so says every photographer who has examined any of them, and this exclamation is not merely a tribute to the beauty and grace of their design, for invariably the desire has at the same time been expressed to possess one of these truly novel and substantial Cameras.

Wherein lies the merit and attractiveness of the Revolving-Back Camera, that photographers want to cast aside cameras now in use and procure one of this new pattern? Briefly stated, it enables the view taker to secure either an upright or a horizontal picture without changing the plate holder after it has been slid into the carriage. No other camera can with such wondrous ease and celerity be changed from the vertical to the upright or *vice versa*. The carriage is simply turned about in the circle and automatically fastened. By this latter provision the carriage may be secured at either quarter of the circle. Ordinarily, the slide will be drawn out of the holder to the right; but in certain confined situations, the ability to withdraw the slide to the left enables the photographer to obtain a view which he could not get with the usual provision in a camera. The photographer of experience is well aware of the difficulty, when taking an upright picture with a large camera without the revolving back feature, of reaching up to draw out the slide at the top, and, what is more essential, of getting out the slide without fogging the plate in the holder.

Grace and strength are combined in the Revolving-Back Camera, and its highly-desirable features are gained without the sacrifice of steadiness or any other essential principle in a good camera. Indeed, its merit is such that out-door photography has been advanced and made more attractive by its introduction.

REVOLVING-BACK CAMERAS.

(PATENTED.)



(FRONT FOCUS PATTERN.)

REDUCED PRICE LIST.

Revolving-back Cameras, each incased in a canvas bag, with handle, and above 14x17 size, with two handles.

REVERSIBLE.				Single Swing.	Double Swing.	
No. 120.	For View 4	x 5	in.....	\$27 00	\$32 00	
" 121.	"	4 1/4 x 5 1/2	".....	29 00	34 00	
" 122.	"	4 1/4 x 6 1/2	".....	31 00	36 00	
" 123.	"	5 x 7	".....	33 00	38 00	
" 124.	"	5 x 8	".....	35 00	40 00	
" 125.	"	6 1/2 x 8 1/2	".....	40 00	45 00	
" 126.	"	8 x 10	".....	45 00	50 00	
" 127.	"	10 x 12	".....	60 00	65 00	
" 128.	"	11 x 14	" with detachable revolving back.	65 00	70 00	With Revolving Back and Reversible Back and Holders for Each Back.
" 129.	"	14 x 17	" " "	75 00	80 00	\$90 00
" 130.	"	17 x 20	" " "	85 00	90 00	105 00
" 131.	"	18 x 22	" " "	95 00	100 00	130 00
" 132.	"	20 x 24	" " "	115 00	120 00	150 00

These Cameras are fitted with Daisy Dry-plate Holders.

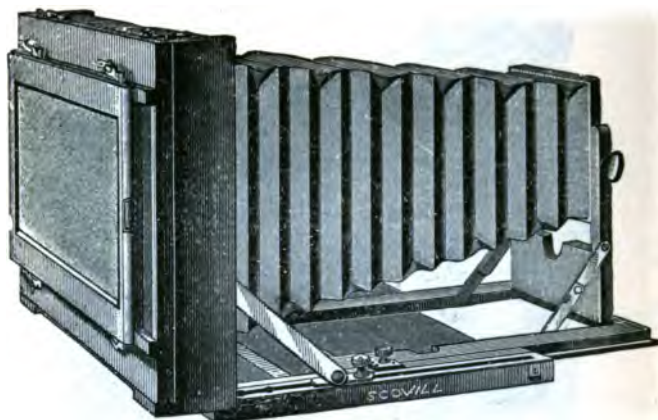
Please state, when ordering any size below 10x12, whether front or back focus is desired.

Revolving-back Cameras, front focus, not made above 8x10 size.

Canvas cases to contain Camera with more than one Holder made to order at extra price.

→* IRVING VIEW CAMERAS. *←

The IRVING Camera recently introduced by the American Optical Co. was awarded the highest prize by the judges at the American Institute Fair. They expressed themselves as unable to see how a more complete, compact, light, handsome and serviceable camera could be made.



The Irving Cameras all have swing front in addition to swing back, also vertical shifting front board. They have the Howe patent reversible back, fitted with self-locking ground-glass frame, and when desired, celluloid is used in place of glass for the focusing screen. One of the best features of the camera is the absence of detachable screws. An idea of this is conveyed by the illustration showing the camera when extended.

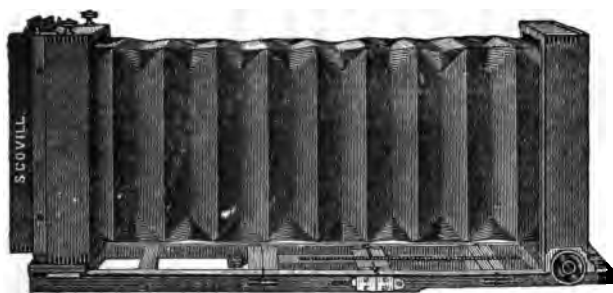


A superb canvas case, the finest ever made, is supplied with each one of the Irving Cameras.

	Single Swing.	Double Swing.		Single Swing.	Double Swing.
4 x 5	\$27.00	\$32.00	10 x 12	60.00	\$65.00
5 x 7	32.00	38.00	11 x 14	65.00	70.00
5 x 8	35.00	40.00	14 x 17	75.00	80.00
6 1/4 x 8 1/2	40.00	45.00	17 x 20	85.00	90.00
8 x 10	45.00	50.00	18 x 22	95.00	100.00

In order to convey an idea of the lightness of these cameras, it is sufficient to say that the 5 x 8 size camera weighs only 8 lbs.

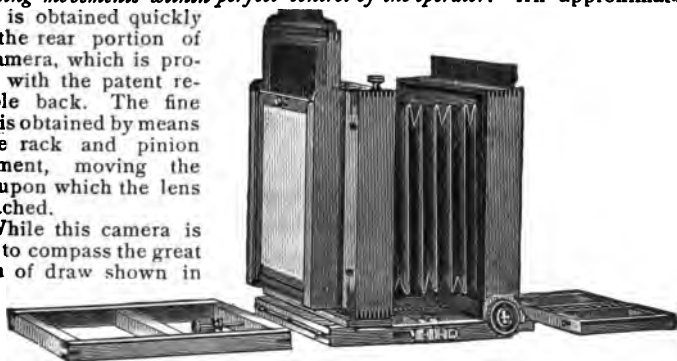
THE SCOVILL MANIFOLD CAMERA.



While this camera serves manifold purposes as its name indicates, nothing could be more simple or more easily manipulated. The Manifold Camera has

special advantages peculiar to itself and possesses the greatest number of desirable features which can be combined in a camera without sacrificing lightness and compactness, or having complicated adjustments. The unique device which controls the horizontal and vertical swings was invented by Mr. W. J. Stillman, of the editorial staff of the PHOTOGRAPHIC TIMES. *To this has been added a central latch for the purpose of bringing the swing movements within perfect control of the operator.* An approximate focus is obtained quickly with the rear portion of the camera, which is provided with the patent reversible back. The fine focus is obtained by means of the rack and pinion movement, moving the front upon which the lens is attached.

While this camera is made to compass the great length of draw shown in



the first illustration, the rear portion of the bed may be wholly detached, and when desired, one-third of the remaining portion of the platform; a great advantage when photographing interiors, when an obtrusive tail board renders focusing almost an impossibility. With one-half of the bed taken off, this camera is still of the usual length of draw. The ground glass, when not in use, is displaced, *not detached*, by having the plate holder slid in front of it. This arrangement of ground glass and plate holder is shown in the second view. Still another noticeable feature is the absence of clamping screws from the front boards, to move which one needs but to press firmly against the lens. The bed folds in front of and behind the camera, and has the patented latch.

PRICE LIST, including Canvas Case for Camera and one Holder.

No.	No.	No.
140. $8\frac{1}{4} \times 4\frac{1}{4}$ size \$30 00	143. $4\frac{3}{4} \times 6\frac{1}{4}$ size \$38 00	145. $6\frac{1}{2} \times 8\frac{1}{2}$ size \$45 00
141. 4×5 size.... 32 00	144. 5×7 size.... 38 00	146. 8×10 size... 50 00

SCOVILL HAND CAMERAS.

PATENTED.



THE SCOVILL HAND CAMERAS have long held the highest rank on account of their finish and superior excellence throughout.

8¼x4¼ Scovill Hand Camera, with Instantané Lens and three Double-holders	\$55 00
4x5 Scovill Hand Camera, with Instantané Lens and three Double-holders	60 00
4¼x6½ Scovill Hand Camera, with Instantané Lens and three Double-holders	90 00
4¾x6½ or 5x7 Scovill Hand Camera, with Instantané Lens and three Double-holders	100 00

SCOVILL ROLL-HOLDER HAND CAMERAS.

It naturally followed upon the introduction of the Roll-holder that it should be applied to the Scovill Hand Camera, and this has been done in a manner that displays the greatest ingenuity. Attached to each is the Patent Automatic Tally, to record the number of exposures made.

8¼x4¼ Scovill Hand Camera, with Instantané Lens, Roll-holder, Automatic Tally and one Double Dry-plate Holder	\$70 00
4x5 Scovill Hand Camera, with Instantané Lens, Roll-holder, and one Double Dry-plate Holder	75 00

They are furnished with a Revolving Finder for both vertical and horizontal views.

THE TRIAD CAMERAS.



When a discovery in photography is announced, it is claimed that the new article will displace everything then in use. These claims are seldom justified. There is generally found a place for the new article, if it has any value, and for the old as well.

For commercial purposes, for instance, such as the reproduction of photographs for illustration, it has been demonstrated that collodion "wet" plates are better than dry plates. For the use of the amateur, on the other hand, dry plates are much better than wet plates. Though many new supports have been tried, the sale of glass dry plates is larger now than ever before. Where only a few pictures are to be made on one day's outing it is likely that the experienced photographer will always use dry plates or cut films.

If he is going away for a summer vacation, or for a trip abroad, and expecting to make a large number of pictures, he will procure a roll holder loaded with continuous films. This will save him the bother of developing while he is away from home, and of changing plates; but he cannot well know what results he has secured until he has exposed the entire roll and has had it developed.

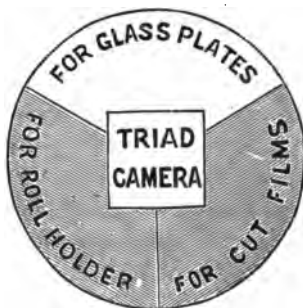
For those who want to use celluloid instead of glass plates, and are not willing to trust to good luck in the exposure of the complete roll of film, we offer with the "TRIAD" camera a *double* film holder which is very light. If the amateur carries six of these holders (loaded with twelve films) he is well supplied for one day; that is, if he is prudent and aims to get only really good pictures. At night, either in a photographic

studio or in his own hotel room, the exposed films may be put away into safe receptacles, and another lot of unexposed films substituted for them.

The TRIAD Camera is fitted with the latest improved Roll Holder for continuous films, two double holders for glass plates, or two double film holders, if the latter are preferred.

This Camera is fitted with an Instantaneous Rapid Group Lens with easily interchangeable diaphragms—the most satisfactory detective camera lens ever made. It has a finder so constructed that the image is the same as that on the ground glass, though of course it is proportionately diminished in size. Usually the finder in a Detective Camera shows simply the image on the plate, but not its relative size and proportions. The Instantaneous Shutter in this camera is provided with a speed adjuster which works from the outside, and the focusing device and scale are conveniently near the finder. This is very important when one is trying to photograph rapidly moving objects.

For timed exposures use a tripod (easily adjusted to the camera by the plate underneath), open the door at the back, so that the image on the ground glass can be easily seen, set the shutter with the opening opposite the lens, and bring into use the cap which fits the opening in front of the camera. By complying with these simple requirements you have a complete camera for timed exposures.



TRADE MARK.

		Price complete.	Price without Roll Holder.
4x5 Triad Camera, with Roll Holder, two Double Dry			
Plate Holders, or two Cut Film Holders,	-	\$35 00	\$25 00
Extra 4x5 Triad Double Dry Plate Holders, each,	- - -		1 25

Holders for Cut Films, same prices as above.

THE HENRY CLAY CAMERA.

THIS IS THE ONLY DOUBLE SHIFTING AND SWING-
FRONT HAND CAMERA.



The case is leather-covered, and when closed there is no finder visible, or openings elsewhere, to indicate that the Camera mechanism is concealed inside.

To open the front of Camera press on the knob at the top of the Camera. It will at once be apparent how the lens board may be racked outward until the front end of it is over the lines which indicate the focus for various distances. The figure 60 on the focusing scale indicates the focus for 60 feet or beyond. The finder of the Camera is now placed on the top of the front board, and is therefore always at the same angle as the lens; the finder is a reversible one, which may be turned when the Camera is fastened to a tripod, or is held, not with the handle upward, but with the handle on the side in order to secure a vertical instead of a horizontal view. The front board is arranged to slide upward when taking a tall building, church spire, or any high object, and it is also arranged to swing, to still further aid in that endeavor.

By an ingenious arrangement the swing and vertical sliding adjustments may be made to work when the Camera is turned over and used horizontally.

One of the advantages of this Camera, when used in the hand, is in the taking of street scenes from an elevated position and having the lines of the building straight while the subjects taken may be near by.

On the same principle, objects situated above the Camera level may be taken by reversing the position of lens and finder.

The back of Camera may be opened like the front and then used on a tripod like an ordinary View Camera.

PRICE.

5 x 7 Henry Clay Camera complete, with Instantaneous Lens and Plain Shutter.....	\$50 00
Ditto, with Plain Shutter, Pneumatic Release.....	55 00
Ditto, with Roll Holder and one Double Plate or Film Holder.....	70 00

THE 5x7 HENRY CLAY STEREOSCOPIC CAMERA, FOR TRIPOD AND HAND USE

IT IS commonly known that of all pictures, those which are arranged to give the stereoscopic effect when viewed in a stereoscope, convey the true impression of perspective and solidity. It seems strange, indeed, that of the myriads of instantaneous pictures made, so few are taken with reference to their future use in connection with the stereoscope, *for it is only by that means that the idea of perspective*

and solidity can be conveyed. We can only assign as the reason the present almost universal use of hand cameras, and that none of them have, up to this time, been arranged for stereoscopic pictures.

There is a much over-worked phrase—"the long felt want," but we think that just that, literally, will be met by the new hand camera which the American Optical Company have just finished.

The first illustration shows one of these cameras closed, and you will observe there is no external opening for finder, lens or anything to indicate that the leather-covered case contains the appliances which go to make up an instantaneous camera.

This camera measures eight inches high, nine inches long and five inches wide; its weight is about five pounds. It has a screw plate underneath, so that it may be used with a tripod. It has a door in the back of the case, and through that opening the image thrown by the lenses may be seen on the ground-glass focusing screen.



The second illustration shows the appearance of the camera when open. The pair of Optimus Lenses is fitted with a triplex stereoscopic shutter with pneumatic release, made by the Prosch Manufacturing Company.

The camera is furnished with a focusing scale and a reversible finder. Either half of the stereo. negatives when cut in two are of a size suitable for making lantern slides from.



This camera may also be used to take a single picture of the size of the ground-glass focusing screen (5x7 inches), either vertical or horizontal. In the former case the reversible finder comes into use. The septum which divides the camera inside is arranged so that it may be easily taken out, the stereo. lenses are mounted on a removable front, and an extra front is furnished on which may be placed any lens of not over seven and a half inches equivalent focus.

Price, with a pair of Rapid Rectilinear Lenses and Prosch

Stereoscopic Shutter with Pneumatic Release - \$75.00

This camera can also be made with vertical sliding and swing front. By means of the former the proportion of sky and foreground may be adjusted; the latter permits the taking of subjects which may be either above or below the level of the camera and still preserve the lines vertical.

Price, with a pair of Rapid Rectilinear Lenses and Prosch

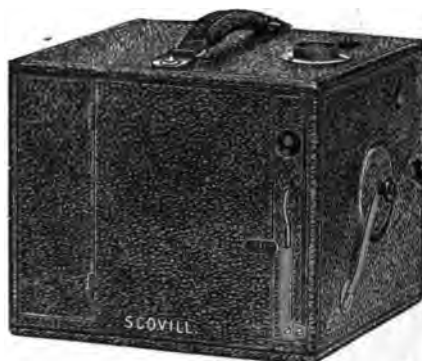
Stereoscopic Shutter with Pneumatic Release, and

with vertical sliding and swing front - - - \$80 00

A 5x7 Roll Holder for Transparent Films can be furnished with either of the above forms of this camera for \$15.00 additional. This addition would make the case about two inches wider and one-quarter inch higher.

— THE —

Improved Waterbury Detective Cameras.



POINTS OF SUPERIORITY.

- Timed and Instantaneous Photographs.** This is the only Detective Camera which is as well adapted for making views as for photographing quickly moving objects. The negatives produced are of such sharpness that they may be enlarged to almost any size. It is in fact,
- The Only Detective Camera** made with plate for tripod, and ground-glass the full size of the plate, just as in an ordinary view camera. This ground-glass is where it cannot easily be broken.
- The Recessed Finder** is fitted to the WATERBURY CAMERA, and it differs from finders ordinarily supplied in that it shows *the same image* as is included on the ground-glass, though diminished in size. It is
- The Least Trouble** of any hand camera, because you can have the negatives developed and the finished pictures delivered directly after making the exposures by sending them to a photographic printer. Where there is no waiting and uncertainty there will be no worry.
- The Instantaneous Lens** in this Camera is not of the "universal focus," distorting, nondescript character, but works with such rapidity and is of such uniform excellence that it has added greatly to the popularity of this Camera.
- The Focusing Adjuster** is beside the Finder.

PRICE LIST.

4 x 5 Waterbury Detective Camera, with 2 Double Plate Holders..	Leather Covered.
Double Film Holders are substituted for Plate Holders where desired.	\$35 00
4 x 5 Extra Double Plate Holders.....	1 25

OUR NEW ANTIQUE OAK

DETECTIVE CAMERAS.

TO MEET the demand for a cheap Detective Camera within the reach of the youth, and of those who want to make but a moderate investment in photographic appliances, we have introduced the



New Antique Oak Detective Camera,

which is made in two styles, *i. e.*, finished in Antique Oak or covered with leather. The whole front of this Camera is hinged, which is a great convenience. The Camera has two Recessed Finders, an Instantaneous and Time Shutter with Speed Regulator Cap for timed exposures, and one Double Dry Plate Holder, and

is certainly Lighter and more Compact than any other Cheap Detective Camera in the market, and what is still more Important, has a much more Expensive and more Perfect Lens.

This Double Combination Instantaneous Lens, with interchangeable Stops, when bought separately costs as much as the whole camera. We are enabled to make a low price on the complete Camera, because the Cameras and Lenses are produced in such large quantities.

We would invite the attention of all parties interested in detective work to the sample pictures made by this camera which are on exhibition in every Photo Stock house in this country.

Price, No. 1—4 x 5 Antique Oak Camera,	- - -	\$15.00
" " 2—Knack Camera, Leather Covered,	- - -	17.50
Extra Double Plate Holders, each,	- - - - -	1.00
*Developing and Printing Outfit for the above,		5.00

* Described on page 6.

The Mascot Camera.

With Roll Holder and Double Plate Holder.

PRICE, \$25.00.

Those who have seen the latest pattern of Knack Detective Camera know how light and compact it is. All who have tried one are willing to concede that the lens fitted to this Camera is finer in every respect than any sent out with other Detectives sold at the same price. It ought to be for it costs over three times as much.

We now have a Camera quite similar to the Knack but fitted with **Eastman-Walker Roll Holder** as well as double Plate Holder, which has been named "The Mascot Camera."

The Roll Holder may be used with spools of Film for either 24, 48 or 100 exposures.

Price for 4x5 size Mascot Camera, complete, \$25.00

Without Roll Holder, - - - 15.00

Leather Covered extra, - - - 2.00

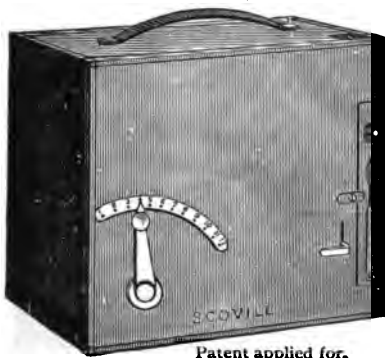
Double Dry Plate Holders extra, - 1.00

ADVILL CAMERAS

FOR CUT FILMS.

DIRECTIONS. { *SET THE SHUTTER.*
 { *TOUCH THE RELEASE.*
 { *MOVE THE INDICATOR.*

There are many amateur photographers who do not want to be encumbered with glass plates, nor do they want to use films in rolls, as in many roll holders one hundred exposures must be made before any portion of the roll can be developed, and the finished pictures conveniently made. Our



Patent applied for.

Advill Cameras

—made for either twelve or eighteen cut films—are a happy medium between these extremes. Each film carrier has a number corresponding to a similar number on the outside of the camera. After exposing one film move the indicator along from one number to the next number to get the exposed film out of the way and the unexposed film into place.

The camera is fitted with an Instantaneous Lens, which has an arrangement connected with it for changing the stops in the Lens without opening the camera. The shutter is arranged for both timed and instantaneous exposures. Attached to the leather-covered case there is a recessed finder.

	PRICE.
No. 1, for 12 4 x 5 Films, - - - -	\$20 00
No. 8, for 12 4 x 5 Glass Plates, - - - -	25 00

The "TOM THUMB" Camera.

PATENTED MAY 27, 1889.

THE "TOM THUMB" CAMERA is the latest invention in photographic apparatus, and is without doubt destined to supersede all the numerous so-called Detective Cameras, inasmuch as, when not in actual use, it can be put out of sight in one's pocket. Fig. 1 shows the Camera complete for carrying in the pocket. Fig. 2 is a Black Walnut Case, $4\frac{1}{4}$ inches each way, for carrying the Camera by hand, and also allowing it to be operated as readily as when out of the case.

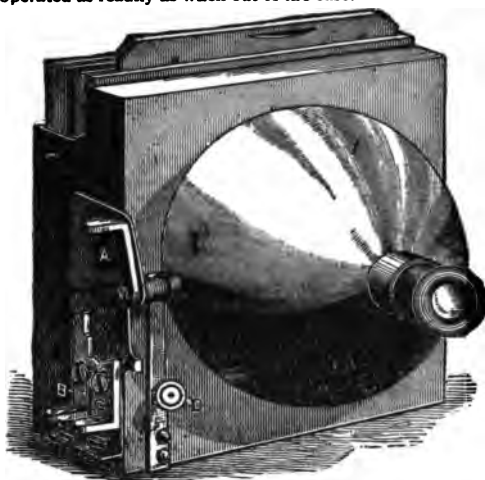


FIGURE 1.

This Camera is perfectly made, nickel-plated, handsomely finished, and justly deserves the encomium, "*Multum in Parvo*." It is furnished with a very light Plate-Holder (a dozen of which may be easily carried in a pocket). A circular diaphragm is provided for inserting in the back of the Camera when round pictures are desired. The shutter is adapted for both instantaneous and time work; the speed is regulated by the Screw "D" shown in cut. Full instructions for operating, which are simple, are furnished with each Camera.

The great demand for a Camera which is compact, perfectly reliable, and ever-ready (thus providing a genuine Detective Camera, as well as one for ORDINARY or SPECIAL work of any nature), is fully met with in the "TOM THUMB."

It must not be imagined that because the Camera is small that it is not good. It takes a picture $2\frac{1}{4}$ inches square, perfect in every respect, and easily developed and printed in the usual manner. The Cameras are provided with PERISCOPE Lenses, and are in practical use by Journalists, Artists, Scientists, Photographers, Amateurs, etc., for making Views, Portraits, Magic Lantern Slides, Interiors, etc.

DIRECTIONS.

The Plate-Holder is inserted in the same manner as that of an ordinary Camera. See that the shutter is set before drawing the slide. Set the shutter by moving the Arm A until its extremity is engaged by the second Catch C. For an instantaneous exposure release the shutter by pressing Catch B. When a time exposure is desired, release Catch C, when the arm will strike B and remain open until released at B, as for instantaneous exposures. The rapidity of the exposure may be regulated by the Screw D. To remove Camera from the case, withdraw sliding-bottom and pass the Camera downward through the opening.

Universal Focus, 8ft. and beyond.

SIZE OF FIGURE 1, $3\frac{1}{4}$ inches square on back; $2\frac{1}{2}$ inches deep in focal length. WEIGHT, $7\frac{1}{2}$ ounces. SIZE OF PLATE USED, $2\frac{1}{4}$ inches square.

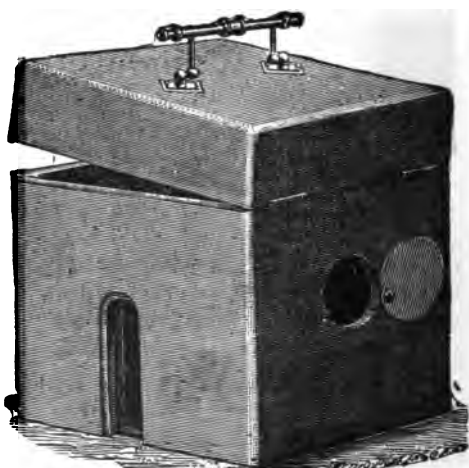


FIGURE 2.

Price Complete, \$10.00.

Sensitive Plates, per dozen, 30c. Extra Plate Holders (double), 90c. each.

Developing Outfit, \$2.00.—Comprising: 1 Ruby Lantern, 2 Trays, 1 Pkg. Developer, 2 ozs, Graduate, 1 lb. Hypo, 1 doz. Plates.

SCOVILL**Pocket Photographic Outfit for Bicyclists.**

WITH WHICH TO SECURE MEMENTOES OF PLEASANT EXCURSIONS.

So popular has amateur photography become among wheelmen, that the two amusements are now often combined. The Camera allows unbounded opportunities to the amateur bicyclist to gather choice landscape views.

THE SCOVILL "POCKET" PHOTO-OUTFIT,

Consisting of a $3\frac{1}{2} \times 4\frac{1}{2}$ "Pocket" Camera, with Double Dry Plate Holder, with *patent Registering Slides* and Hinged Ground Glass. This Camera weighs only 12 ounces.

A UNIVERSAL JOINT BICYCLE ATTACHMENT.

A. S. M. C. INSTANTANEOUS LENS, with *Stops*.

The "Pocket" Bicycle Camera weighs only 12 ounces.

PRICE. - - - \$10.00.

NICKEL-PLATED BICYCLE ADJUSTABLE SUPPORT \$2 00

This has no loose pieces, and is so accurately made as to have no side play.

BOOK CAMERA.

In introducing our New Book Camera, we present a photographic instrument which we think will be appreciated by the Ladies as well as by the opposite sex. Our chief aim has been



to manufacture a camera that is compact and light, and, at the same time, not have the appearance of the ordinary square hand-camera which is now almost universally recognized and avoided. This has been accomplished, after careful study, and we take great pleasure in recommending our new

BOOK CAMERA.

The general appearance of this new camera is of three leather-covered books encircled by a strap. Attached to this strap is a neat handle by which to carry the camera. No lady or gentlemen need have any fear that this parcel will attract attention as a camera for it certainly looks as much unlike a camera as anything can, and it is a very striking counterfeit of a parcel of three *bona-fide* books.

The lens for this ingenious instrument is a rectilinear combination, of the wide-angle variety, with interchangeable stops made expressly for this camera, and is superior to anything yet offered at its very low price.

The construction of the shutter is after the leaf pattern, and is located between the lens glasses—a feature not used in ordinary hand-cameras. This gives a wider range of angle and does away with the use of a stopper for the lens.

The Outfit consists of a Camera and lens, with leaf shutter,

One 4 x 5 double Film plate holder,

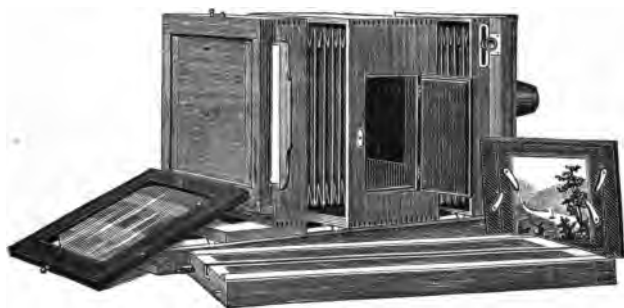
One 4 x 5 single dry plate holder,

One canvas case with shoulder straps (the canvas case is only 10½ x 6 x 7, and will accommodate five extra plate holders).

Price of Outfit, complete, - \$25.00.

THE WALMSLEY PHOTO-MICROGRAPHIC CAMERA.

Manufactured by the **American Optical Co.** Now in use by many Colleges and leading Microscopists, and is an efficient, practical and cheap instrument for the purpose.



It is made in three forms: the cheapest (selling for \$18.00) is adapted only to the making of negatives on plates $8\frac{1}{4} \times 4\frac{1}{4}$, or $4\frac{1}{4} \times 5\frac{1}{8}$, as may be necessary. The complete form (costing \$30) is also a miniature enlarging, reducing, and copying camera, admirably adapted to the production of lantern transparencies from any size negative up to $4\frac{1}{4} \times 5\frac{1}{8}$.

The camera (of mahogany) is square, carrying a Flammang single plate holder for $4\frac{1}{4} \times 5\frac{1}{8}$ plates; usable vertically or horizontally, and with kits for $8\frac{1}{4} \times 4\frac{1}{4}$ plates. The bellows are in two sections, with a central division of mahogany, which carries a removable partition, to which a suitable rectilinear photographic lens can be attached, for enlarging, reducing, or copying. A light-tight door on one side of this wooden section gives ready access to the lens for inserting or removing diaphragms, or other necessary manipulations, whilst a milled head, accessible from the same opening, clamps the lens-bearing section firmly to the bed of the camera at any desired point.

The bellows have an extension of two feet in addition to the length of the box, sliding very smoothly upon V-shaped ways, which for greater convenience are made in two sections, firmly attached to each other by wooden dowels, and a solid brass screw, worked by a milled head.

The bellows are firmly held at any desired point of extension by a cam, operated by a lever conveniently placed at the rear of the focusing screen, which latter is hinged at the bottom, and when not in use, lies out of the

way upon the extension bed. The screen itself is of the very finest ground glass, but is used only for arranging the portion of the object to be photographed properly in the center of the plate, as no surface can be ground finely enough to permit the sharp focusing of any delicately-lined object. For this purpose, a circle or disc of thin microscopic covering glass is attached with balsam to the center of the ground glass screen, which clears away all the inequalities of the latter, and leaves an exquisitely fine surface to receive the image, which by using an ordinary focusing glass may be as sharply defined as in the eye-piece of the microscope.

The front of the camera (which is double-shifting, for the purpose of centering), carries a cone-shaped tube, which receives the tube of the microscope when the latter is inclined to a horizontal position, and conveys the image-bearing rays of light therefrom into the body of the camera. This cone is removable, and in its place may be inserted kits, carrying negatives from quarter to half size, for enlargement or reduction to lantern slides as may be desired. Or a front board, bearing a lens, may be inserted in its place, converting the camera into a copying one. Indeed, a more complete instrument for all the purposes for which it was devised could scarcely be conceived or desired.

In use, the camera is attached to a solid platform (which also carries the microscope and lamp) by a screw such as is used with an ordinary tripod. By this means any jar or tremor produced by a passing vehicle or other means, is communicated to microscope and camera alike, preventing any diminution of sharpness in the negative. By this arrangement also, the whole apparatus is so compact that, with the bellows closed, the operator can easily see the image upon the ground glass, and at the same time reach the milled heads upon the microscope controlling the stage and focusing movements, permitting the arrangement of the subject with the greatest nicety. But when the bellows are extended to their full length, some appliance becomes necessary to operate the fine adjustment of focus, whilst the eye can discern the changes upon the screen. This is most simply effected in the employment of a fine cord passing in a groove around the periphery of the milled head of the fine adjustment screw, and thence through a series of hook eyes to the rear of the camera bed, where it is held taut by a couple of leaden weights. The slightest pull upon either cord moves the fine adjustment screw with the utmost nicety.

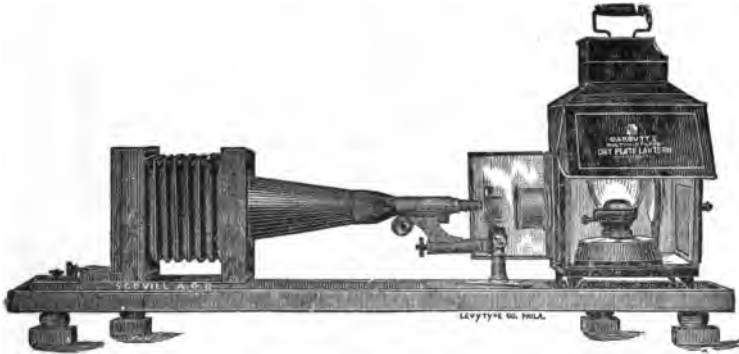
PRICE.

Walmsley Micro-Camera.....	\$18 00
“ 4¼ x 5½, enlarging, reducing, and copying pattern.....	80 00
Walmsley Micro-Camera, 6½ x 8½, enlarging, reducing, and copying pattern.....	85 00

The Scovill Photo-Microscopic Outfit.

Photographing with the microscope has hitherto been accomplished by the aid of elaborate and costly apparatus, and been applied chiefly to making illustrations for scientific magazines. The process used, that of wet collodion in connection with sunlight, involved the procurement of an expensive heliostat to produce a steady illumination, for with any less powerful light the exposure would necessarily be so prolonged that the coating of the plate would dry and become useless. Now all this is changed, for with the modern improvements in photography which are the result of the introduction of gelatine dry plates, the photographing of microscopic objects becomes as easy of accomplishment as the photographing of the beautiful and visible in nature is with the popular amateur outfits.

The scientist and microscopist, instead of spending hours in making imperfect drawings, aided by the camera lucida, may in a few minutes, with the assistance of photography, produce a more perfect representation of a minute object than it is possible for the hand of man to do, working conjointly with the eye. Not only can an enlarged image of a microscopic object be formed for illustration, but professors in colleges will find it a ready means to produce negatives of a suitable size from which may be made transparencies or magic lantern slides for exhibition to classes or the public.



If this is done in the daytime, a room from which all white light is excluded should be selected; but if used at night, as in most cases it would be, the operations may all be performed in the midst of a family group for their interest and amusement, and to impart to them knowledge of the minute life or organisms of the world which the microscope alone can reveal.

The Scovill Photo-Microscopic Equipment,

—CONSISTING OF—

- 1 Scovill Special Half Plate Camera.
- 1 Multum in Parvo Lantern, with Double Condenser.
- 1 dozen $4\frac{1}{4} \times 5\frac{1}{2}$ size B Keystone Plates to make Negatives; also
- 1 dozen $3\frac{1}{4} \times 4\frac{1}{4}$ size A Plates for Transparencies.

Price, Complete, \$18.00

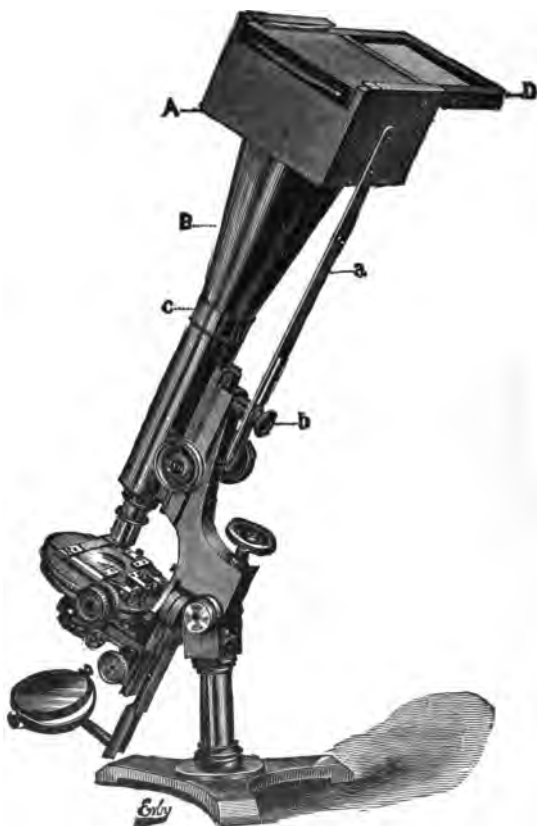
The Camera, Alone, 9.00

The presumption is that you are provided with a microscope. If not, we recommend the purchase of one from a regular dealer in microscopical goods.

Circular containing directions for use sent with each outfit.

THE MERCER Photo-Micrographic CAMERA.

Size $2\frac{1}{2} \times 3\frac{1}{4}$. Price, \$7.50.



Mercer Camera, shown with Microscope to illustrate working.

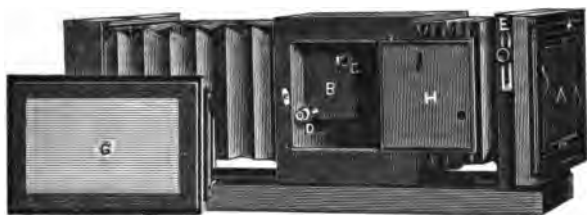
This Camera is provided with a Brass Cone and Plate holder with Ground Glass attached, to slide back and forth in the carriage as desired.

The Stereo Transparency Camera.

A new copying camera for making stereoscopic transparencies from stereoscopic negatives without cutting the negative is now manufactured by the American Optical Company.

Midway between the ends of the camera is a frame which divides the body of the camera in two parts. A door at the side (H) gives access to the inside. On a hooded front (B), with a flap shutter, is screwed a pair of 5 or 6 inch lenses. The front carrying the lenses is so arranged that the lenses may, by means of screws (D), be brought nearer to each other or farther apart. If it is intended that the transparency be a little smaller or larger in scale than the negative, the bellows in front and rear of this frame permits the same to be accomplished.

To practically illustrate. In front of camera (A) button a $\frac{5}{8}$ stereo negative, placing it upside down and film side in. Move the center portion with the lenses back from the negative, so that from the stop of the lens to the negative will be twice the focal length of the lens in use. Clamp this section, and move the ground glass back until the distance from ground glass to stop of lens equals twice the focus of lens in use. Adjust the ground glass until the image on the same is sharp, then tighten all clamp screws.



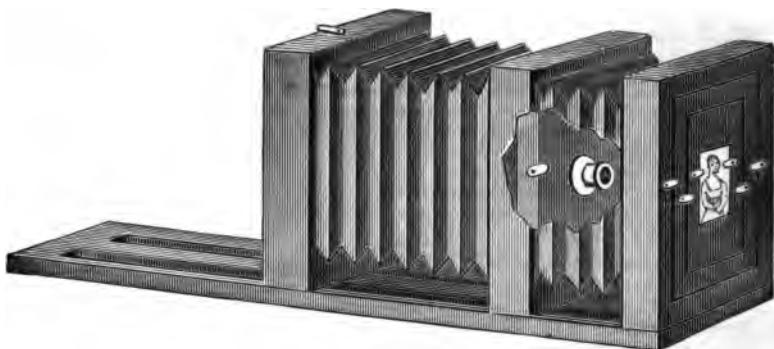
A, Stereo negative. B, Hooded front, covering lenses. C, Mill-head for raising flap shutter. D, Screw for moving right-hand lens. E, Set screw for vertical sliding front. F, Ground glass. G, Holder. H, Door.

The diaphragm at back of camera gives the size of the two images being $3\frac{1}{4}$ inches high by 3 inches wide. Inside the rear bellows is placed a bellows division separating the light from the two lenses. The sliding front of camera carrying the negative should now be moved up or down in order to fix a base line for the picture, which will be an imaginary line drawn across the negative and passing through two similar objects in the two halves of negative. This settled, then by means of the milled head screw move the right-hand lens so as to bring some object, as a tree, corner of a house or fence, that it may be close to the side of diaphragm; then move the other lens so the same object will be $\frac{1}{8}$ of an inch from the other diaphragm.

These points settled, place a Keystone ground glass transparency plate, $3\frac{1}{4} \times 6\frac{3}{4}$ inches, in the holder, and adjust it to the camera. Place fairly small stops in the lenses; close the flap shutter by means of the milled head (C), draw slide to holder, point camera to the sky; then raise the flap shutter and give one, two or three seconds, according to circumstances. After developing, fixing, washing and drying, the face is covered with a thin piece of glass and the edges bound, when the transparency is ready for the stereoscope.

Price, without Lenses, \$35.00.

The Scovill Enlarging, Reducing and Copying Cameras.



When ordering, please specify number and sizes of kits, also style of Holder wanted.

No.	Size,	Price,
No. 61.	Size, 6½x8½	\$30.00
" 62.	" 8x10	" 85.00
" 63.	" 10x12	" 48.00
" 64.	" 11x14	" 60.00
" 65.	" 14x17	" 72.00
" 66.	" 17x20	" 90.00
" 66½.	" 18x22	" 100.00
" 67.	" 20x24	" 110.00

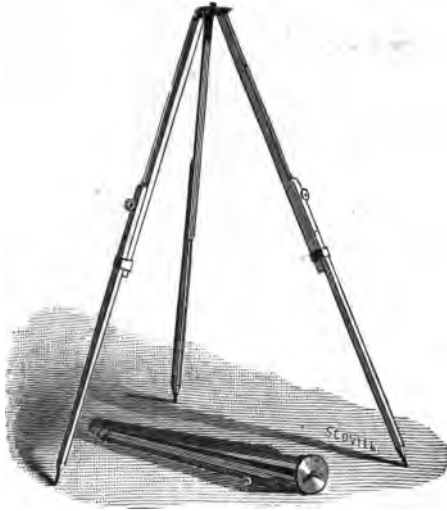
Special sizes and styles made to order.

The form of construction of this new Camera is made apparent by the illustration here shown. The experienced copyist will not need any such simple directions for use as we append.

DIRECTIONS FOR USE.

To copy a negative in the natural size, place it in the kit on the front of Camera and button it in. Attached to the center frame of the Camera is a division upon which, on the side toward the Camera front, a Lens is mounted. Suppose this to be a quarter-plate Portrait Lens, the focal length of which we will suppose to be 4 inches—draw back the center frame and the Lens twice the focal length of the Lens (8 inches); slide the back frame with ground glass the same distance from the center frame. To enlarge with the same Lens to eight times the size of the original, the center of the Lens must be 4½ inches from the negative, and the ground glass be 36 inches from the center of the Lens. To reduce in the same proportion, reverse and have 36 inches from the center of the Lens to the negative, and from the center of Lens to ground glass 4½ inches.

THE SCOVILL EXTENSION TRIPODS.



THIS Tripod possesses special advantages. It can be set up, ready for use, quicker than any other, and with less trouble. By turning the brass buttons shown in the accompanying illustration, the legs may "in a twinkling" be extended to the desired length, and fastened. When this Tripod is placed on uneven ground, the camera it supports may be brought to the proper level by simply adjusting the length of the Tripod legs. Another commendable feature of the Scovill Extension Tripod is, that it has no detachable parts to be misplaced or lost. Combining as it does firmness, strength and lightness, this Tripod must at once find favor with the professional view taker, who very often wastes valuable time, or loses opportune moments in placing the Tripod legs and changing their position to include just what is wanted in a picture, and to level the camera. The artist for a sketching trip finds the top of this Tripod a very convenient place to fasten his Easel, as well as his camera.

No. 1, for 1-4 and 4x5 Cameras.....	each, \$3 00
" 2, " 5x8 Cameras.....	" 3 25
" 2½, " " ".....	" 3 50
" 3, " 6½x8½ Cameras....	" 5 00

THE ALBION TRIPOD.

This is the most elegant Tripod ever introduced. It is adapted to and is firm enough to support without vibration any View Camera from 5 x 7 to 10 x 12 size, inclusive.



The Legs of this Tripod are adjustable as to length, and may be quickly folded. As the binding straps are attached, they are always in place when wanted.

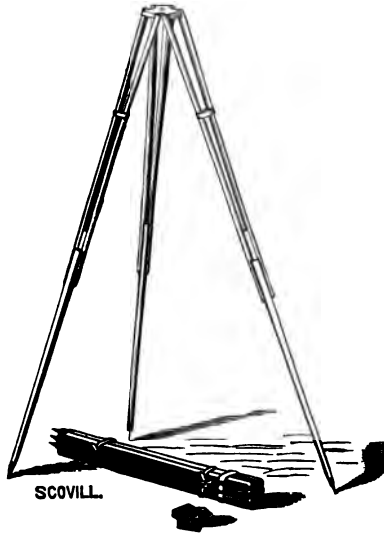
The artistic design and faultless finish of every portion of this Tripod cannot be realized without seeing one, and to use an ALBION TRIPOD means to be fully satisfied, and wish for none other.



No. 1, Cherry wood.....	\$4 50
No. 2, " ".....	6 00
No. 3, Spruce (very light), price.....	6 00

The Scovill Adjustable Tripod.

(FEATHER WEIGHT.)



Nothing more compact, certainly nothing as graceful in appearance and light in weight as the new Tripod for out-door Photography, just produced by the American Optical Company, has yet made its appearance. Because so readily adjusted to the utmost irregularity of the earth's surface, it was decided to call it the "Adjustable Tripod." Lady amateurs prefer it to any other pattern on account of its lightness and beauty. The top is covered with billiard-cloth to prevent marring the fine polish on our cameras, and the clamping screws are not detachable.

SCOVILL ADJUSTABLE TRIPOD.

No. 1.....	Price, each, \$3.50
" 2.....	" 5.00

Scovill Adjustable Jointed Tripod, to fold and pack
in a 22-inch Valise..... \$4.00
Do. with Canvas Bag and Handle.. 4.75



THE IMPROVED TAYLOR TRIPOD.

The illustration here presented makes an extended description unnecessary. Suffice it to say that this tripod is very firm when set up, and folds up compactly by simply pressing together the two upper joints of each leg, thus unsetting them from the pins on the brass top and then doubling them over on to the third joint. This movement is naturally reversed when placing the tripod in position to support the camera.

Price, with metal disc and non-detachable screw.....\$2.25 each.
Adapted for cameras from 1-4 to 8x10 size.

The Daisy Tripod.

An inspection of one of these Tripods will convince the most skeptical that it has no superior for ease of adjustment, lightness and compactness.

Length, when folded 16 $\frac{1}{2}$ inches.

Weight, 2 lbs.

Price, \$5.00.



Patent Camera Reversing Attachments.

ADAPTED ONLY TO SCOVILL
EXTENSION TRIPODS.



No. 1, with No. 1 Extension Tripod, and
Camera Bed Plate \$4 50
No. 2, with No. 2 Extension Tripod..... 5 00

“When the means for the reversal of a camera are brought into notice, it is a fair test to ascertain how quickly the movement can be consummated; is the mechanism intricate or the reverse; and, finally, does it aid in picture-taking, or, per contra, impair the worth of the production.

“When the new reversing attachment devised at the American Optical Co.’s factory is seen, no manual of instruction need be consulted to ascertain how it is applied or worked. This is obvious. A cut does not convey an idea of its merit thus readily.

“Two brass plates, hinged at the end, are opened to form a right angle and held rigidly in that position, or are brought together and tightly clamped by a rod with a hooked end, which plays through an opening in the brass plate secured fast to the tripod top. Upon the upper plate the camera is set or unset at pleasure. Whether in the vertical or horizontal position, the camera is held so firmly as to be secured against vibration. The reversal can be effected in an instant.”

LIGHT-WEIGHT

Double Holders.



Patented November 15, 1887,

and January 24, 1888.



SHOWING
PATENT REGISTERING SLIDE.



WITH FRONT SLIDE
TAKEN OUT

Substantial, serviceable and accurate double holders cannot be made smaller or lighter than the Scovill Light-weight Holders, and though so thin kits may be used in them. The Light-weight Holders yield a negative *the full width of the plate*, and, what is equally important, the plate may be placed in these holders or removed therefrom *without touching the sensitive surface and without danger of breaking it*. Observe the means shown in illustration for locking the slides. The Light-weight Holders are made with solid frame so that they *will not come apart, leak light, or warp*. Every holder has the *patent Registering Slides* described on page 49.

If you want to secure *accurate focusing* use the Light-weight, or any of the other Scovill Plate Holders.

Price Light-weight Double Holder ; also Scovill Double Film Holder.

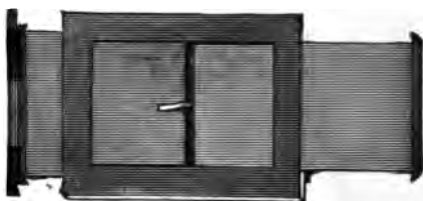
3 1/4 x 4 1/4	\$1.10	5 x 7	\$1.80
4 x 5	1.25	5 1/2 x 7	1.40
4 1/4 x 5 1/4	1.25	5 x 8	1.40
4 1/4 x 6 1/4	1.25	6 1/2 x 8 1/4	1.70
4 3/4 x 6 1/4	1.80	8 x 10	2.00

Light-Weight Holders can be fitted to any American Optical Co. Camera or Scovill Outfit.

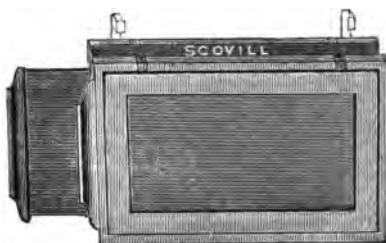
THE SCOVILL DRY PLATE HOLDER.

(PATENTED.)

Scovill's Patent Double Dry Plate Holders are reversible, and made to receive kits.



THE DAISY DRY PLATE HOLDER.

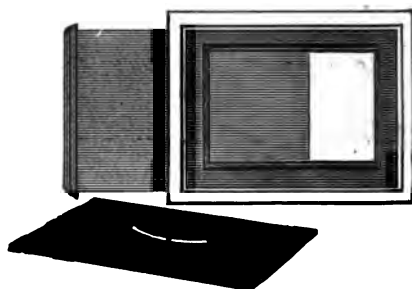


"This holder is a Daisy." The frequent repetition of this exclamation fixed the name by which this holder is designated. It has the great merit of being lighter and of occupying less space than any other substantial holder that has ever been devised. The Daisy Holder opens like a book when the dry plates are being put into or taken out of it, and is so arranged that light cannot penetrate through from one side to the other. There are no projecting screws on this holder. What supplies their place is simple and more effective. The slides have no catches, as they are unnecessary.

THE FLAMMANG Single Dry Plate HOLDER.

(PATENTED.)

Arranged to take Kits of
Lesser Size.



When making Dry Plate Holders of our patented designs to fit cameras not made by us, we are obliged to add 25 per cent. to the list price, as such holders must be made singly, not in quantity. Even with the addition to the list, we cannot expect to get more than the cost.

Size.	Scovill's Patent Double Dry Plate Holder. Kits extra.	Daisy Double Dry Plate Holder. Kits extra.	Flammang's Single Dry Plate Holder. With Kits	Albion Holders.
8½x4½.....	\$1 10	\$1 75	\$1 50	
4x5.....	1 25	2 00	1 75	
4½x5½.....	1 25	2 10	1 85	
4½x6½.....	1 25	2 25	1 90	\$2 25
5x7.....	1 30	2 35	2 10	2 35
5x8.....	1 40	2 50	2 20	2 50
6½x8½.....	1 70	4 20	3 80	3 25
8x10.....	2 00	6 00	5 00	4 30

REGISTERING SLIDES.

(PATENTED.)

Will be supplied with new American Optical Co.'s Dry Plate Cameras and Amateur Outfits up to 10x12 size without addition to present price list.



Extract from "PHOTOGRAPHIC TIMES," March, 1884.

In the pleasure or excitement attendant upon picture-taking, holders have been so changed about that the note-book afforded no clue to their identity. All photographers, whether professional or amateur, who have in time past puzzled their brains in the endeavor to solve such vexatious questions as these—

"Have I or have I not exposed that plate?"

"If exposed, was the plate used for that prized picture?"

"Shall I incur the risk of making a double exposure?"

henceforth will have themselves only to find fault with if they do not procure and use in their dry-plate holders registering slides, or as they have been called "Record Slides." These can be written upon with slate or lead pencil *ad libitum*, and the writing erased without injury to them. Before taking a picture the mottled surface of these slides is seen; afterward they are turned, so that the blackboard surface, which was toward the sensitive plate, is out, and the data respecting the exposures are penciled thereon—a very convenient place, by the way, to consult it when developing the plates.

The material out of which these Registering Slides is made is so hard that they outlast common paper slides in the proportion of five to one. Additional Holder Slides of this kind supplied at the following prices:

PRICE REGISTERING SLIDES.

	Each.		Each.
Size for $3\frac{1}{2} \times 4\frac{1}{2}$	\$0 18	Size for 5×7	\$0 85
" 4×5	20	" 5×8	40
" $4\frac{1}{2} \times 5\frac{1}{2}$	24	" $6\frac{1}{2} \times 8\frac{1}{2}$	55
" $4\frac{1}{2} \times 6\frac{1}{2}$	28	" 8×10	75

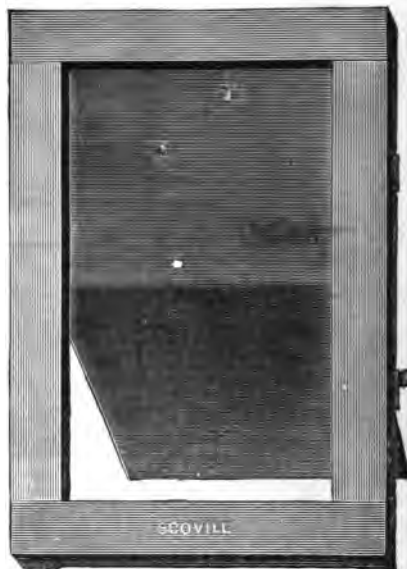
Registering Slides not made above 8×10 size.

IRVING PRINTING FRAMES

(PATENTED.)



IRVING PRINTING FRAME, CLOSED.
FRONT VIEW.



IRVING PRINTING FRAME, OPEN.
BACK VIEW.

The IRVING FRAMES have valuable features which cannot be copied. They are in workmanship, design, and other respects, superior to all other printing frames.

The continuous felt pads made especially to order for us, insure absolute protection and uniform pressure throughout. The Irving Patent Catches lock the back, so that when one flap is open there is not the slightest danger of the flaps, paper or negative slipping.

The springs are cut by dies of specially tempered and tested metal, and are riveted to the backs with washers underneath to protect the wood-work.

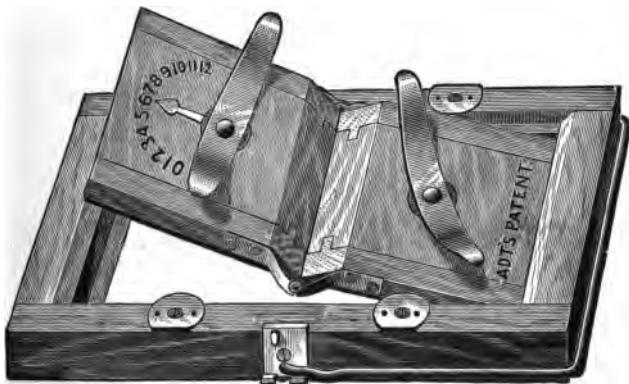
The IRVING FRAMES are made of cherry guaranteed not to warp or crack. The tally does not depend upon any other part of the frame to lock it, for the pointer will remain in place no matter what is done to other parts of the frame.

Prices for Half or Two-thirds Opening Styles.

3½ x 4¼.....	\$0 45	5 x 7.....	\$0 60
4 x 5.....	48	5 x 8.....	65
4½ x 5½.....	50	6½ x 8½.....	70
4¾ x 6¼.....	55	8 x 10.....	80

When made with backs to open lengthways, ten per cent. is added to the foregoing prices, for the respective sizes.

ADT'S PATENT PRINTING FRAME. WITH ADJUSTABLE SUPPORTS.



These Frames are now supplied (without extra charge) with Adt's Patent Support with which the frame can be stood on either end, and at four different angles, for exposure while printing. It is out of the way of the printer when introducing the paper, or examining the print, for when the frame lies or is held with back up, the support instantly drops upon its stops for rest, and is entirely out of the way of the hand of the printer, so that he may remove or open the back-board, or replace it, as if there were no support present. Being arranged close around the sides and ends of the frame, it occupies so

little space as not to interfere with the packing or storage of the frames, and when the printer places his frame for exposure the support readily finds its position for supporting the frame without any special manipulation.

PRICES.

3½ x 4¼	.....	\$0 50
4 x 5	.....	50
4¼ x 5½	.....	50
4½ x 6¼	.....	60
5 x 7	.....	65
5 x 8	.....	65
6½ x 8¼	.....	75
8 x 10	.....	85
10 x 12	.....	1 15
11 x 14	.....	2 15
13 x 16	.....	2 40
14 x 17	.....	2 80

When made with back to open lengthways, an additional charge of 10 per cent. will be added to the above prices.

As will be seen by a glance at the cut, the adjacent edges of the parts of the back-board are beveled outward, and the hinges placed on the sides with their axes on a line with the surface. This permits the attachment to the face of the back-board of a **Heavy, Continuous Elastic Felt Pad**. This obviates the necessity of using a separate pad, which is so easily misplaced and lost.



THE SCOVILL PRINTING FRAME PADS.

For		Frames, in boxes, per dozen	First Quality. Gray.
3½ x 4½		\$0 24
4 x 5	" "	38
4½ x 5½	" "	36
4½ x 6½	" "	38
5 x 7	" "	54
5 x 8	" "	57
6½ x 8½	" "	84
8 x 10	" "	1 44
10 x 12	" "	2 16
11 x 14	" "	2 88
14 x 17	" "	4 08
16 x 20	" "	5 04
17 x 20	" "	5 28
18 x 22	" "	6 48
20 x 24	" "	8 40

The above goods are put up in boxes containing one dozen pads each. We have improved the quality, and, as you will notice, have reduced the price.

NEGATIVE BOXES.



FOR HOLDING
TWENTY-FOUR PLATES
EACH.

	Regular, with Hook.	Light Tight, with Lock and Key.		Regular, with Hook.	Light Tight, with Lock and Key.
3½ x 4½.....	\$0 62	\$1 62	5 x 7.....	\$0 85	\$1 85
4 x 5.....	65	1 65	5 x 8.....	90	1 90
4½ x 5½.....	70	1 70	6½ x 8½.....	1 00	2 00
4½ x 6½.....	75	1 75			

NEGATIVE STORAGE BOX.

To hold 100 4x5 Negatives in Preservers.....\$1 00

WATERBURY NEGATIVE BOXES.

Very Light—for Twelve Plates.

4x5.....	\$0 30
5x7.....	47
5x8.....	50

LANTERN SLIDE BOXES.

No. 1, to hold 25 Lantern Slides.....	\$0 65
" 2, " 50 " ".....	1 30
" 3, " 100 " ".....	2 50

WATERBURY LENSES.



The unprecedented success which has everywhere resulted from the employment of the Waterbury Lenses, for 4x5 and 5x8 plates respectively, induced the Scovill & Adams Co. to extend the series of this favorite objective. The popular C Waterbury Lens gave an opportunity for producing 8x10 and even 10x12 photographs with the sharpness, detail and brilliancy of the smaller sizes, but after its advent there was still a gap between the 5x8 and 8x10 sizes. The desire to see the Waterbury series complete has led to the production of the BB Waterbury Lens, which covers $6\frac{1}{2} \times 8\frac{1}{2}$ (the ever-popular 4-4 size) to the extreme edges. In future, revolving diaphragms will be supplied with all of the Waterbury Lenses. In them are cut (with mathematical accuracy) openings in value $\frac{1}{f}$, $\frac{1}{f_0}$, $\frac{1}{f_1}$, $\frac{1}{f_2}$, $\frac{1}{f_3}$, respectively.

The Waterbury Lenses are composed of a biconvex crown glass lens cemented to another lens of the plano-convex form, made of the best selected flint glass.

Owing to the great advances in the sensitiveness of emulsion plates, the Waterbury Lenses are now commonly used for groups and for instantaneous views, with the Scovill Safety Shutters, described on another page. No better testimony can be given to the excellence and reliability of these objectives, and the mathematical accuracy with which they are made, than that deduced from the recent test made of 892 lenses of the C series, in which large number only two lenses differed at all in focal length or luminous power from the others.

	Diameter. Inches.	Back-focus. Inches.	
A, Single, for 4 x 5 plate	$1\frac{1}{4}$	6	\$3 50
A, Matched pair, stereoscopic....			7 00
B, Single, for 5 x 8 plate.....	$1\frac{1}{2}$	10	4 50
BB, Single, for $6\frac{1}{2} \times 8\frac{1}{2}$ plate.....	$1\frac{1}{2}$	$10\frac{3}{4}$	6 00
C, Single, for 8 x 10 plate.....	$2\frac{1}{2}$	16	8 00

Elite Time and Instantaneous Shutter, with Pneumatic Release, for use with Waterbury Lenses, \$3.00 extra.

The Scovill Economic Lenses.



These Lenses are intended to fill the want experienced by thousands of successful workers with the Waterbury Lens for a good, low-priced Rectilinear Wide-Angle Lens, whereby they can gain artistic effects in perspective at short distances.



PRICE SCOVILL ECONOMIC LENSES.

No.	Size of Plate.	Back Focus.	Equivalent Focus.	Price.
3	6½ x 8½	6 inches.	6½ inches.	\$15 00
4	8 x 10	8 "	8½ "	20 00

Morrison Wide-angle View Lenses.



These Lenses are absolutely rectilinear; they embrace an angle of fully 90 degrees, and are the most rapid, and are universally conceded to be the best *wide-angle* lenses made.

No.	Diameter of Lenses.		Equivalent Focus.	Price.	These five sizes will fit one flange.
3.....	1 1/8	.....	4 1/2 inches.....	\$25 00
4.....	1 1/4	.....	6 ".....	25 00
5.....	1 1/2	.....	7 ".....	25 00
	Front Comb.	Back Comb.			
6.....	1 1/8	1 1/8.....	8 1/4 ".....	30 00	These two sizes will fit one flange.
7.....	1 1/4	1 1/4.....	11 1/2 ".....	40 00	
8.....	1 1/2	.....	13 ".....	50 00
9.....	1 3/4	.....	18 ".....	60 00
10.....	2	.....	22 ".....	80 00

Nos. 1 to 6 are all made in matched pairs for stereoscopic work. The shorter focused Lenses are especially adapted for street and other views in confined situations. For general purposes, a pair of No. 5 Lenses will be found most useful.

We desire to call your attention to the

Morrison Combination Wide-Angle Lenses.

The acknowledged superiority of the Morrison Wide-angle Lenses, and the desire of photographers to have a number representing the various focal lengths in as compact form as possible, rendered it necessary for Mr. Morrison to devise a scheme for combining the various foci in one instrument. This he did some years ago, and his "Combination" Lenses are now in great demand.

An elegant morocco case, velvet lined, four and a quarter inches long by two and a half wide by one and three-quarter high, contains one eight-inch Wide-angle Lens in its usual brass mounting, with revolving diaphragm, and a set of Lens Cells of four, five, six, and eight inches focal length respectively. These Lens Cells are interchangeable, and the operator is thus possessed of one Lens Combination by which he secures focal length of four, five, six, seven and eight inches, and hence is fully equipped for interior and exterior work from 4x5 to 8x10 in the most confined situations, or for landscapes at nearest and greatest distances from the point of observation.

The device is so simple that it will be readily understood from the following explanation. Put in Cells as follows:

Front.	Back.	
5.....with.....	4.....	for 4-inch Back Focus.
5....."	5.....	" 5 " "
6....."	5.....	" 6 " "
6....."	8.....	" 7 " "
8....."	8.....	" 8 " "

Thus the operator combines five focal lengths in one Lens.

These Lenses if purchased separately, would cost in the aggregate \$180, thus a saving of \$55 is effected.

No. 1, price complete in morocco case.....\$75 00

No. 2, combining four, five, and six inches focal lengths... 55 00

≡ THE ≡ INSTANTANÉ LENS.

With Aluminum Mount and Iris Diaphragm.



The several lenses which form the combination of the Instantané are ground from the newly invented glass which has found such prompt recognition in Europe. By reason of the crystalline purity and whiteness of this glass, the Instantané will be found to answer the most difficult requirements in *Speed*, and to work satisfactorily when others fail.

Having such a remarkably brilliant, yet soft illumination, this lens will be found vastly superior to all others of the Rectilinear class for Portraits. Used with the full opening, it takes a portrait of very superior quality.

The Instantané Lens is perfectly Rectilinear, and entirely free from astigmatism, even when used with its full aperture. It has the most remarkable depth of focus ever produced in any lens of the character.

The Instantané is one of the few lenses that are really Aplanatic. It is guaranteed not only to cover the size plate for which it is sold, but to do this without the least loss of definition on the edge of the plate.

It has a good field, although not so forced a capacity as some, resulting in a considerably larger image of the principal object than any other lens of its size would yield, besides absolute freedom from any distortion whatever.

Price List of Instantané Lenses.

		Equiv. Focus.	
No. 1, for 4 x 5	size, instantaneous or timed		
	photographs	6 inches	\$30 00
No. 2, for 5 x 8	size	8 "	35 00
No. 3, " 6½ x 8½	"	10 "	50 00
No. 4, " 8 x 10	"	12 "	60 00

4x5 Instantané Lens, with Inst. Shutter and Iris Diaphragm, price \$40.00.

SCOVILL'S PORTRAIT LENS,

For $3\frac{1}{4} \times 4\frac{1}{4}$ and 4×5 Portraits, or in pairs for Stereoscopic Views
on 5×8 plate.....price each, \$8 75

Scovill's "Peerless" Quick-Acting Stereoscopic Lenses,**FOR PORTRAITURE OR VIEWS.**

These Lenses are especially designed for Stereoscopic Photography,
and are so constructed that they will work well for interiors or exteriors.

They are particularly adapted for instantaneous work.

Diameter of Lenses, $1\frac{1}{4}$ inch ; focal length, $8\frac{1}{4}$ inches.

By removing the back lens and substituting the front combination a
focal length of $5\frac{1}{4}$ inches is obtained.

They are supplied with six Waterhouse diaphragms in morocco case.

Price, per pair.....\$25 00

Imitation Dallmeyer Lens.....each, 9 50

" " Lenses, matched for Stereoscopic Work, per pair, 17 00

**Darlot Wide-Angle Rectilinear
View Lenses.**

These Lenses embrace an angle of 90 deg., and are valuable for
taking views of buildings, interiors, etc., in confined situations, where
those of longer focus cannot be used.

Back Focus.	Size View.	Price.
No. 1, $2\frac{1}{4}$ inches.....	For Stereoscopic Work, each.....	\$12 50
" 2, 3 "	" " "	15 00
" 3, 5 "	" " "	20 00
" 4, 8 "	" " "	25 00
" 5, 12 "	" " "	35 00

Darlot Rapid Hemispherical View Lenses.

These Lenses embrace an angle of from 60 to 75 degs.; are quick-act-
ing, perfectly rectilinear, and provided with central stops. Will be found
very fine lenses for landscapes and outdoor groups; also for copying en-
gravings, maps, architectural subjects, etc.

Back Focus.	Size View.	Price.	Rigid Mounts
No. 1, $5\frac{1}{4}$ inches.....	5×6	\$15 00.....	\$13 50
" 2, 9 "	5×8	25 00.....	20 00
" 3, $10\frac{1}{4}$ "	8×10	35 00.....	30 00
" 4, 14 "	10×14	50 00.....	45 00

No. 1 can be had in matched pairs for Stereoscopic Work.



DESCRIPTION AND PRICES

OF THE

GUNDLACH RAPID RECTIGRAPHIC.

No.	Size of Plate.	Diam. of Lenses.	Equivalent Focus.	Focus of Back Lens.	Focus of Front lens.	Price.
0	3 1/4 x 4 1/4	1 1/8 in.	5 in.	8 in.	11 in.	\$14 00
1	4 x 5	1 1/8 "	6 1/4 "	10 "	13 1/2 "	20 00
1 1/2	4 1/4 x 6 1/2	1 1/8 "	7 "	11 "	14 3/4 "	25 00
2	5 x 8	1 1/4 "	8 1/2 "	12 1/2 "	18 "	30 00
3	6 1/2 x 8 1/2	1 1/2 "	11 "	17 "	23 "	38 00
4	8 x 10	1 3/4 "	13 "	20 1/2 "	28 "	50 00
5	10 x 12	2 "	16 "	25 1/4 "	34 "	64 00
6	11 x 14	2 1/4 "	18 1/2 "	29 1/4 "	39 1/2 "	76 00
7	14 x 17	2 3/4 "	22 "	34 3/4 "	47 "	100 00
8	17 x 20	3 1/4 "	26 "	41 "	56 "	125 00

The brilliancy of the image and especially the flatness of field and fine definition at the extreme margin of the plate place these new lenses decidedly ahead of any others.

The two triplets constituting the new lenses are of *different focal length*, the back lens having a much shorter focus than the front lens, and their relative curvatures are so calculated as to secure perfect *optical* (not geometrical) symmetry of the compound, and at the same time, to form perfect achromatic and aplanatic objectives, for themselves, if used singly. This novel plan offers the important advantage that these new lenses now in fact contain or consist of *three* objectives of different powers or focal lengths, which are of the following approximate proportion :

Equivalent of Compound 2,

Back lens alone 3,

Front lens alone 4,

thus giving, on the same plate, pictures differing in size about as 2 to 3 to 4. To use the back lens alone the front lens is to be removed and the hood screwed into its place. To use the front lens alone, the back lens is to be removed and the front lens screwed into its place. The focal lengths of the compound and of each separate lens are engraved on the mounts of the lenses.

STEINHEIL LENSES.

QUALITY, not quantity, governs in determining the price of lenses. By an examination of the following price list, which supersedes all previous ones, it will be seen that Steinheil lenses are sold lower than any first-class lenses with which alone they may be compared. The introduction of Steinheil lenses marked an important advance in photographic optics.

HOW TO SELECT A STEINHEIL LENS.

In order to meet the various requirements, and to insure in each special case as perfect work as possible, we make lenses of different constructions.

Our lenses are divided into six *series*, presented in the order of their respective rapidities. Each series begins with No. 1 for the smallest size, and continues upwards. To avoid errors, it is therefore necessary in ordering to quote both the number of the series and the number of the lens in the present catalogue.

All our lenses are rectilinear and are strictly corrected for spherical errors and chemical focus

They are free from disturbing reflections, and strongly illuminated objects can be taken with them without producing flare or light spots. They are, moreover, constructed so as to give the greatest possible equality of definition over the whole picture.

In focusing with these lenses always use largest stop and focus on object of chief interest. Then without changing focus insert proper diaphragm to secure depth in foreground and background.

The scientific basis of our establishment and the precise methods employed both in the manufacture of our astronomical and photographic apparatus, enable us to produce lenses of such uniform accuracy, that the means of most vigorous testing at our command fail to reveal any differences in the instruments we send out.

We make it a special point never to supply a lens which is capable of improvement at our hands.

According to the principle involved in their construction, our lenses are divided into two classes, viz: *Antiplanetic* and *Aplanatic*.

Antiplanetic Lenses.

(Patented in United States and Europe.)

Briefly stated, these lenses, which are the result of a series of calculations extending through several years, are composed of two non-symmetrical combinations each of as great but opposite faults as possible, which

correct each other. One combination has a shorter focus than the objective as a whole, and the other has a negative focus. The combinations are placed closely together.

By the peculiar construction, as described above, differing widely from the usual forms, it has been possible to correct to a considerable extent the hitherto greatest defect in photographic objectives, viz., "Astigmatism," and the consequent rapid decrease of definition from the center to the margin of the picture.

The result is greater sharpness and depth distributed more equally over a larger and strictly even picture, before any decrease in definition is perceptible.

Illumination, too, is more evenly distributed in consequence of lenses being proportionately nearer together.

These properties allow the lenses to be worked with full aperture or large stops, and gives them great rapidity of action.

The perfectly correct delineation produced by the antiplanets render them particularly suitable for enlargements as well as for dissolving view apparatus.

If small and sharp originals are taken, and subsequently enlarged, depths are obtained which would be unattainable in larger pictures taken *direct* with same amount of light. For this purpose, which will probably play an important part in photography, the antiplanets are specially suitable.

In making enlargements the front lens of the antiplanets should always be turned towards the enlarged picture, and the back lens towards the object to be enlarged.

This construction is designed for strictly even and correctly delineated pictures, and all tilting of the camera should be decidedly avoided and a movable lens board used instead.

The antiplanets are made in two series: The portrait antiplanets (Series I.) and the group antiplanets (Series II.), the latter being, however, also excellent dry plate portrait lenses.

Aplanatic Lenses.

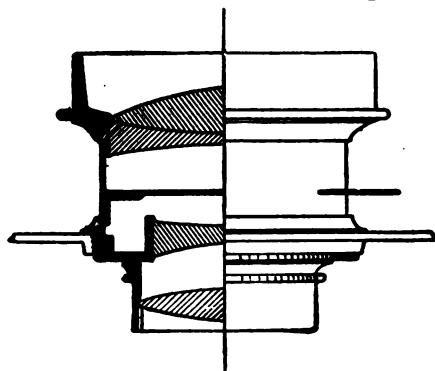
These lenses consist of the original and now well-known symmetrical and rectilinear combinations, invented by STEINHEIL in 1868 but not patented. They are made in four series, each of which is especially designed for a certain class of work. Their capabilities and object are fully explained below.

The lenses of Series V., also Series III., No. 1; Series IV., Nos. 1 and 2 have rotary diaphragms.

All the other lenses are furnished with Waterhouse diaphragms in morocco case.

STEINHEIL LENSES.

Series I.—Patent Antiplanetic Portrait Lens.



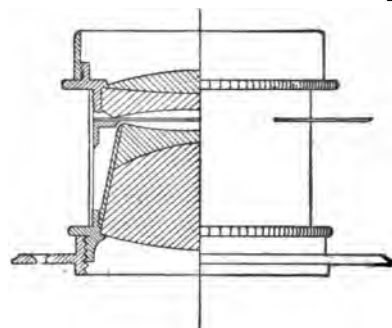
The rapidity is the same as in the usual Portrait Objectives, but there is more equality in the distribution of sharpness and illumination over the picture and greater depth. Contrary to the ordinary Portrait Objectives they produce perfectly correct delineation. Designed for *Portraits, Enlargements, and Dissolving View Apparatus.*

Series I.—Patent Antiplanetic Portrait Lens.

No.	Aperture, Inches.	Focal Length, Inches.	Plate, Inches.	Price.
1.....	$\frac{5}{8}$	2	Locket-Size.	\$25 00
1a.....	$1\frac{1}{4}$	$4\frac{1}{4}$	1-9 plate.	50 00
1b.....	$2\frac{1}{4}$	$7\frac{1}{4}$	1-6 plate	75 00
2.....	3	$9\frac{1}{2}$	Carte de Viste.	100 00
3.....	$3\frac{5}{8}$	$12\frac{5}{8}$	Cabinet.	165 00
4.....	$5\frac{1}{4}$	$23\frac{5}{8}$	Boudoir up to $\frac{1}{2}$ life-size.	880 00

Special quotations for larger sizes.

Series II.—Patent Antiplanetic Group Lens.



New in principle and construction, consisting of two non-symmetrical cemented pairs, placed closely together. It is rectilinear, and is remarkable for its powerful and even illumination and sharpness. In rapidity, it is only excelled by the regular and expensive portrait combinations.

Recent improvements in the mounting of the lenses of this Series make them still more compact than formerly and allow the front hood of lens to screw off uncovering a screw thread which can be very conveniently used for adjusting lens to detective cameras shutters, prisms or other appliances.

Designed for *Portraits, Groups, Architecture, Landscape, Instantaneous Work and Enlargements.*

Unexcelled for *Flashlight Portraits and Groups.*

No.	Aperture, Inches.	Focal Length, Inches.	Size of Portrait or Group, Inches.	Size of View or Landscape, Inches.	Price.
0.....	$\frac{3}{8}$	$1\frac{1}{8}$	$1\frac{1}{8} \times 1\frac{1}{8}$	2 x 2	\$18 00
1.....	11-16	$3\frac{3}{4}$	$8\frac{1}{4} \times 8\frac{1}{4}$	$4\frac{1}{4} \times 8\frac{1}{4}$	21 00
*1b.....	18-16	$4\frac{1}{2}$	$4\frac{1}{4} \times 8\frac{1}{4}$	$4\frac{1}{2} \times 8\frac{3}{4}$	25 00
2.....	1	$5\frac{1}{2}$	$4\frac{1}{2} \times 8\frac{3}{4}$	5 x 4	28 00
*2b.....	1 8-16	$6\frac{1}{2}$	5 x 4	$5\frac{1}{2} \times 4\frac{3}{4}$	38 00
3.....	1 5-16	$7\frac{1}{4}$	$5\frac{1}{2} \times 4\frac{1}{4}$	7 x 5	37 00
4.....	1 11-16	$9\frac{1}{2}$	7 x 5	$8\frac{1}{2} \times 6\frac{1}{2}$	48 00
5.....	$1\frac{1}{8}$	$10\frac{1}{2}$	$8\frac{1}{2} \times 6\frac{1}{2}$	10 x 8	60 00
6.....	$2\frac{1}{8}$	$14\frac{1}{2}$	10 x 8	12 x 10	95 00
7.....	8 1-16	$17\frac{1}{4}$	12 x 10	15 x 12	140 00

* Special Detective Camera Lenses : No. 1 b for plates, $4\frac{1}{4} \times 8\frac{1}{4}$; No. 2 b for plates, 5x4.

Nos. 0 to 8 are made in matched pairs for STEREO WORK.

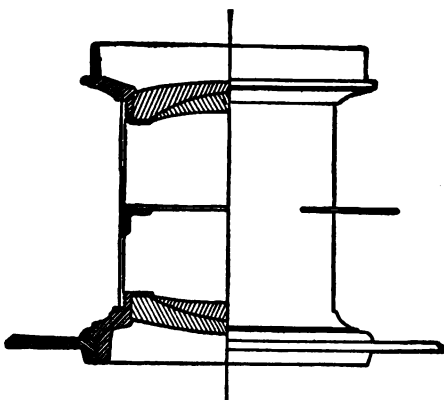
Shutters of any desired make will be fitted to our lenses at manufacturer's prices.

Series III.—Improved Aplanatic Lens.

The prototype of all rapid symmetrical and rectilinear combinations. Is now made with increased illumination and rapidity and guaranteed fully equal or superior to the most expensive lenses of its kind. Next to the Antiplanatic Group Lens, Series II., it is the best lens for general work.

Nos. 5 to 10 inclusive of this Series are now furnished to order with an attachment allowing the distance between front and back combinations to be adjusted either for direct negatives or for copying from flat surfaces, thus practically giving the operator two lenses in one. For direct pictures approach the two combinations as near as the mounting will allow, and for copying separate them in the same manner, whereby the lens loses in depth and gains correspondingly in flatness of field.

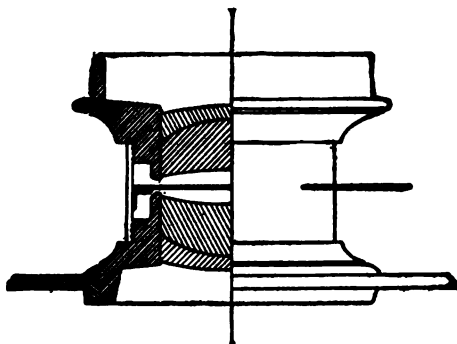
Designed for *Portraits, Groups, Architecture, Landscape and Instantaneous Work*. Also *Copying*, if used with extension as above.



No.	Aperture, Inches.	Focal Length, Inches.	Size of Portrait or Group, Inches.	Size of View or Landscape, Inches.	Price.
1.	$\frac{1}{8}$	$15\frac{1}{2}$	For enlarging,		\$ 18 00
2.	$\frac{3}{8}$	$8\frac{3}{4}$	$8\frac{1}{4} \times 8\frac{1}{4}$	$4\frac{1}{4} \times 8\frac{1}{4}$	18 00
3.	1	$5\frac{1}{2}$	$4\frac{1}{4} \times 8\frac{1}{4}$	$5\frac{1}{2} \times 4\frac{1}{4}$	25 00
4.	$1\frac{1}{4}$	$7\frac{1}{2}$	$5\frac{1}{2} \times 4\frac{1}{4}$	7×5	32 00
4b.	$1\frac{1}{4}$ 9-16	$9\frac{1}{2}$	7×5	$8\frac{1}{2} \times 6\frac{1}{2}$	38 00
5.	1 11-16	11	$8\frac{1}{2} \times 6\frac{1}{2}$	10×8	44 00
6.	2 1-16	$14\frac{1}{2}$	10×8	12×10	57 00
7.	$2\frac{3}{8}$	$17\frac{1}{2}$	12×10	14×11	66 00
8.	2 15-16	21 8-16	17×14	20×17	125 00
9.	3 7-16	25	20×17	23×18	166 00
10.	4 9-16	33	22×18	24×20	245 00

Nos. 2 to 4 are made in matched pairs for STEREO WORK.

Series IV.—Rapid Wide-Angle Aplanat.



Angle about 75 deg., and covering a larger field than the lenses of Series III. Effective aperture about f. 10. Specially designed for *Landscape Work* and *Architecture*, but can also be advantageously used for *Flash-light Interiors* and *Copying*.

Series IV.—Rapid Wide-Angle Aplanat.

No.	Aperture.	Focal Length, Inches.	Size of Picture.		Price.
			Full Aperture. Inches.	Smallest Stop. Inches.	
1.	$\frac{1}{4}$	$23\frac{1}{2}$	2×2	$8\frac{1}{4} \times 8\frac{1}{4}$	\$18 00
2.	$\frac{3}{8}$	3	$8\frac{1}{4} \times 8\frac{1}{4}$	$4\frac{1}{4} \times 4\frac{1}{4}$	21 00
3.	$\frac{1}{2}$	$4\frac{3}{4}$	5×4	7×5	26 00
4.	$\frac{3}{4}$	$6\frac{1}{2}$	7×5	$8\frac{1}{2} \times 6\frac{1}{2}$	33 00
5.	1	$9\frac{1}{2}$	$8\frac{1}{2} \times 6\frac{1}{2}$	12×10	44 00
6.	$1\frac{1}{8}$	$15\frac{1}{2}$	12×10	17×14	66 00
7.	$2\frac{3}{8}$	$23\frac{1}{2}$	17×14	24×20	160 00

It is frequently desirable to get a picture from a given point and to get it just the size to cover your plate, or of any other given size without changing your position. This can only be accomplished by using objectives of different foci, by which you can reduce or enlarge the image at

will. For this work we have arranged a *Set of Four Single Aplanats*, fitting in the same flange, aperture 1 in., covering $8\frac{1}{2} \times 6\frac{1}{2}$ with full aperture, and 12×10 with smallest stop.

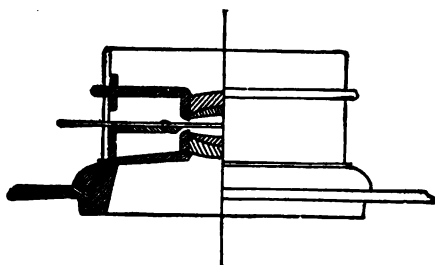
Used singly and by combination among themselves seven different foci are obtained as follows:

II in front with I behind, $7\frac{3}{4}$ in.	II single, - - - $15\frac{5}{8}$ in.
III " " " II " $10\frac{3}{8}$ "	III " " " " " $20\frac{3}{4}$ "
I single, - - - $12\frac{5}{8}$ "	IV " " " " " $24\frac{1}{4}$ "
IV in front with III behind, 18 "	

Price in neat lock-up case, \$85.00.

Sets of any class and size of Aplanats made to order.

Series V.—Extreme Wide-Angle Aplanat.

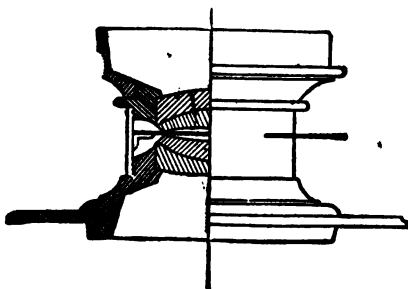


The proportionately short focus and large angle (about 100 deg.) of these lenses make them particularly adapted for *Interiors, Architecture*, and for very high, broad objects taken from short distances.

No.	Aperture. Inches.	Focal Length. Inches.	Size of Sharp Pictures. Inches.	Price.
1.....	3-16	$8\frac{3}{4}$	5 x5	\$26 00
2.....	5-16	$4\frac{3}{4}$	7 x7	30 00
3.....	7-16	$7\frac{1}{4}$	$10\frac{1}{4} \times 10\frac{1}{4}$	42 00
4.....	9-16	$10\frac{3}{8}$	$12\frac{1}{4} \times 12\frac{1}{4}$	61 00
5.....	14-16	16	$18\frac{1}{2} \times 18\frac{1}{2}$	98 00

Special quotations for larger sizes.

Series VI.—Wide-Angle Aplanat for Copying.



These lenses give perfect flatness of picture and sharpness of definition, and have at the same time a considerable field. Designed specially for *Copying Maps, Charts, Drawings, Paintings and Engravings* and *Photomechanical work generally*.

Series VI.—Wide-Angle Aplanat for Copying.

No.	Aperature. Inches.	Focal Length. Inches.	Size of Sharp Picture. Inches.	Price.
1.....	1	14 $\frac{3}{4}$	10 × 10	\$75 00
2.....	1 $\frac{1}{4}$	18	13 × 13	105 00
3.....	1 $\frac{3}{4}$	23 $\frac{5}{8}$	17 × 17	145 00
3 $\frac{1}{2}$	2	30 $\frac{3}{4}$	20 × 20	210 00
4.....	2 $\frac{1}{2}$	38 $\frac{1}{2}$	24 × 24	320 00
5.....	3	48 $\frac{1}{4}$	28 × 28	540 00
6.....	3 $\frac{1}{2}$	56	34 × 34	760 00

Special quotations for larger sizes.

It is only a few years since this lens has been brought to the notice of photo-mechanical establishments in the United States, but it was at once recognized as the very best lens for their work for which it has been specially designed. To-day this lens is found in every establishment where the production of the highest class of work is the first consideration.

As a result of our experience we beg to point out particularly the necessity of avoiding the slightest vibration during exposure, when it is desired to obtain the extremest sharpness of picture which these lenses are capable of producing. It is also advisable not to use too small a diaphragm, as the diffraction caused thereby veils the picture.

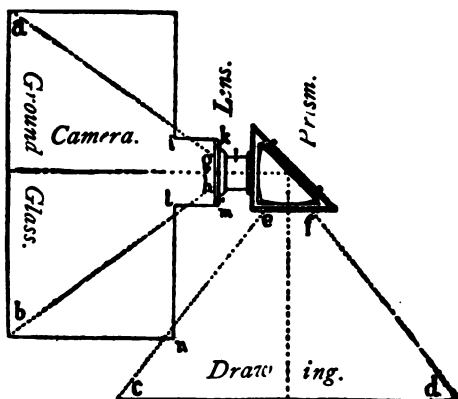
For obtaining inverted negatives, without stripping the film, we have designed the Prisms of Series VII. which can be fitted to the above or any other lenses.

Series VII.—Prisms.

These prisms are made of one solid homogenous mass of glass, with silvered hypotenuse.

They are centered in their mountings and adjustable to our lenses simply by unscrewing the hood of the lens and screwing the prism in its place.

With every prism is furnished a rotary flange with set screw, allowing the prism to be turned and fixed at any angle to the horizon. Designed for making *Inverted Negatives without stripping the film.* Also for special and scientific work.



Series VII.—Prisms.

No.	To work with Lenses as follows :	Price.
1	Ser. III. No. 2; Ser. IV. No. 8, Ser. IV. No. 4.....	
2	Ser. V. No. 1, Ser. V. No. 2.....	\$87 00
3	Ser. IV. No. 5, Ser. V. No. 3, Ser. VI. No. 1.....	41 00
4	Ser. III. No. 3, Ser. VI. No. 2.....	45 00
5	Ser. II. No. 2, Ser. III. No. 4, Ser. V. No. 4.....	57 00
6	Ser. IV. No. 6, Ser. V. No. 5.....	68 00
7	Ser. II. No. 3, Ser. VI. No. 3.....	80 00
8	Ser. III. No. 5, Ser. VI. No. 3, Ser. VI. No. 4.....	110 00
9	Ser. IV. No. 7.....	125 00
10	Ser. II. No. 4, Ser. III. No. 6, Ser. VI. No. 5.....	155 00
11	Ser. VI. No. 6.....	185 00
12	Ser. III. No. 7.....	287 00
13	Ser. III. No. 8.....	498 00

No charge made for *fitting* the above Prisms to Steinheil Lenses. For fitting to other makes of lenses the labor will be charged for at cost.

Series VIII.—Aplanatic Focusing Lenses.

These are a combination of three lenses, so constructed that, at a considerable focal distance and large field, they produce an even, undistorted picture, achromatic both inside and outside of the axis.

No.	Focal Length.	Linear Magnifying Power.	Price.
1.....	3 $\frac{3}{4}$ in.	..... about 8 $\frac{1}{2}$ times.....	\$12 00
2.....	1 $\frac{1}{2}$ "	..... " 5 "	10 00
3.....	1 "	..... " 8 "	8 00

ROSS LENSES.

Ross's Lenses for Cabinet Portraits.

These Lenses have a flat field, and give remarkably brilliant pictures. They have Waterhouse Diaphragms and rack-and-pinion movement. No. 2 will cover 6 $\frac{1}{2}$ x8 $\frac{1}{2}$ plate. No. 3 will cover 8x10 plate, and are very quick workers.

No. 2.—The Lenses, 3 $\frac{3}{4}$ inches clear aperture, 8 inches focus; should be placed at 18 feet from sitter.....\$140 00

No. 3.—The Lenses, 3 $\frac{3}{4}$ inches clear aperture, 10 inches focus; should be placed at 30 feet from sitter..... 156 00

Are in use in many galleries in the United States, to the exclusion of all others.

Ross's Rapid Symmetrical Lenses.

For Groups, Views, Interiors, Copying, and every kind of out-door photography. Giving an angle of from 50 to 80 degs. The "Rapid Symmetricals" being aplanatic, work with full aperture, and are, perhaps, the best and most useful Lenses an amateur or professional photographer can possess for general out-door purposes.

Size View.	Size Group.	Diam. Lenses.	Equiv. Foc.	Rigid Setting.
a 4½ x 3½	Stereo.	½ inch	4½ inch	\$22 00
a 5 x 4	4½ x 3½	1 "	6 "	24 00
7½ x 4½	5 x 4	1 ¼ "	7½ "	42 00
8 x 5	7½ x 4½	1 ½ "	8½ "	46 00
8½ x 6½	8 x 5	1 ¾ "	11 "	52 00
10 x 6	8½ x 6½	2 "	13 "	58 00
12 x 10	10 x 8	2 ½ "	18 "	84 00
12 x 11	11 x 9	2 ¾ "	18 "	92 00
15 x 12	12 x 11	3 ½ "	20 "	116 00
18 x 16	15 x 12	4 ½ "	24 "	148 00
22 x 18	18 x 16	5 ½ "	30 "	200 00
25 x 22	22 x 18	6 ½ "	34 "	240 00

(a) These Lenses are supplied accurately paired for stereoscopic purposes.

Waterhouse Diaphragms are supplied with these Lenses, as the apertures are too large to permit of Rotating Stops; but the latter can be adapted, if required, at small extra cost.

The Rapid Symmetrical Lenses are free from "flare" and distortion, and give absolutely straight marginal lines, rendering them invaluable for all kinds of architectural subjects, dimly-lighted interiors, copying, enlarging, etc. They are also used for instantaneous work with great success.

With smaller stops, each Lens covers the next size larger plate than that given, thereby greatly increasing the angle of view when desired. The two combinations being exactly similar, either can be used alone as an ordinary single Landscape Lens, the focus of which will be exactly double that of the compound.

They are the best universal Lens made.

Ross's Portable Symmetrical Lenses.

For Landscapes, Architecture, and Copying, give wide or ordinary angles, according to the stop used. Since the discovery of photography, perhaps, no lens for Landscape and Architectural purposes has had so great a share of popularity as the Symmetricals. This is doubtless attributable to their extraordinary definition and flatness of field, as well as the exceedingly portable form in which they are constructed. They are much used by amateurs, and are great favorites. For photo-lithographic work, they are unequalled.

No.	Large Stop.	Medium Stop.	Small Stop.	Equiv. Focus.	Price.
a 1	3 x 3	4 x 3	5 x 4	3 inch	\$34 00
a 2	4 x 3	5 x 4	7½ x 4½	4 "	36 00
a 3	5 x 4	7½ x 4½	8 x 5	5 "	28 00
a 4	7½ x 4½	8 x 5	8½ x 6½	6 "	32 00
5	8 x 5	8½ x 6½	9 x 7	7 "	40 00
6	8½ x 6½	9 x 7	10 x 8	8 "	48 00
7	9 x 7	10 x 8	12 x 10	9 "	58 00
8	10 x 8	12 x 10	13 x 11	10 "	64 00
9	12 x 10	13 x 11	15 x 12	12 "	72 00
10	13 x 11	15 x 12	18 x 16	15 "	80 00
11	15 x 12	18 x 16	22 x 18	18 "	96 00
12	18 x 16	22 x 18	25 x 21	21 "	120 00

(a) These Lenses are supplied accurately paired for stereoscopic purposes.

Nos. 1 to 8, Rotating Diaphragms. Nos. 9 to 12, Waterhouse Diaphragms.

The first ten of the series, having their screws alike, fit into the same flange.

These Lenses can be used with full aperture when only a limited field is required; while with smaller stops a wide-angle is obtained. They work with about the same rapidity as the ordinary-angle Doublets, their largest aperture being about equal to one-sixteenth of their focus. They give straight marginal lines, and, in consequence of the combination being placed so close together (leaving only just room enough for the diaphragm), they are absolutely free from distortion and flare.

Beck Autograph Rectilinear Lenses.

None genuine without this engraved on the tube.

Ref. Beck.

These Lenses possess qualities entirely their own.



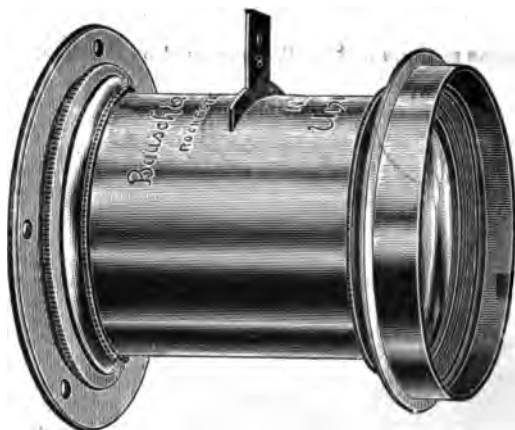
5 x 4. ACTUAL SIZE.

These Lenses are perfectly Aplanatic, covering with full aperture to the extreme corners the size plate for which they are designated in the list, and much larger sizes when moderately stopped down. They are very rapid in action rendering them particularly valuable for instantaneous and short-time exposures; are rigidly rectilinear and symmetrical; possess wonderful penetration and definition, and are the lightest

and most compact of any lenses in the market—a matter of no small moment to the landscape photographer. The No. 5 Lens will make life-size heads, sharp and free from distortion. They are in use in many of the leading galleries of the country.

No.	Size of Plate.	Diameter of Lenses.	Back Focus.	Equiv ^t lent Focus.	Angle.	Price.
1	8 $\frac{1}{4}$ x 4 $\frac{1}{4}$	$\frac{3}{8}$ in.	4 $\frac{1}{2}$ in.	5 in.	75°	\$25 00
2	4 $\frac{1}{4}$ x 5 $\frac{1}{2}$	1 in.	6 in.	6 $\frac{3}{4}$ in.	70°	30 00
3	5 x 8	1 $\frac{1}{4}$ in.	8 in.	8 $\frac{3}{4}$ in.	64°	35 00
4	6 $\frac{1}{4}$ x 8 $\frac{1}{4}$	1 $\frac{1}{2}$ in.	10 $\frac{1}{4}$ in.	11 in.	67°	50 00
5	8 x 10	1 $\frac{3}{4}$ in.	12 $\frac{1}{4}$ in.	13 in.	66°	60 00
6	10 x 12	2 in.	14 $\frac{1}{2}$ in.	16 in.	66°	75 00
7	11 x 14	2 $\frac{1}{4}$ in.	16 $\frac{3}{4}$ in.	18 in.	66°	100 00
8	14 x 17	3 in.	22 in.	24 in.	66°	160 00
9	20 x 22	3 $\frac{3}{4}$ in.	27 $\frac{1}{2}$ in.	30 in.	66°	200 00

Bausch & Lomb Rapid Universal Lenses.



(Full Size, 5 x 8, R. U.)

These Lenses since their first introduction have enjoyed an unusual popularity and are beyond doubt destined to become the best known Lenses in the American market, due to their merits only. We are desirous that they be compared in every direction with the best foreign productions of similar type. They are of the rectilinear, compound type, intended for studio work and all kinds of out-door photography. They are in no manner an imitation of any form, but have a construction peculiarly their own, the result of years of experiment to reach the highest results. The glass is specially manufactured, of unusual hardness and brilliancy, involving specially favorable curves and the practical advantage that the Lenses are not liable to become scratched or undergo chemical changes. The cement is absolutely colorless and not liable to deterioration. The mountings are of neat design, well finished and carefully centered.

The diaphragm rings, which have been in use several years, have found general commendation. They are readily attached or removed, and for ordinary work may be left undisturbed. By means of them the angle is reduced, giving unusual depth and flatness without affecting the speed to any extent. Without the rings, the Lenses have a speed given in the table below, with a covering capacity or flatness *at least* equal to that of any known Lens, and greater speed than any of the regular rectilinear Lenses. Every Lens is supplied with morocco cap and case and eight stops. Unless otherwise mentioned, brass stops are supplied, but finding that hard rubber is excellently adapted to this purpose, and considerably lighter in weight, they are also made of this material and can be supplied in place of those in brass, when desired.

Nos.	Large Stop Covers.	Medium Stop Covers.	Diameter of Lenses.	Back Focus.	Equivalent Focus.	Largest Stop.	Price.
4½	3¼ x 4¼	4 x 5	¾ in.	4¾ in.	5¼ in.	f6.7	\$16 00
5	4 x 5	5 x 8	1 1-16 in.	5¾ in.	6¼ in.	f7.0	20 00
8	5 x 8	6¼ x 8½	1¾ in.	7¾ in.	8¾ in.	f7.0	24 00
8½	6¼ x 8½	8 x 10	1¾ in.	10¾ in.	11¼ in.	f7.5	33 00
10	8 x 10	10 x 12	1¾ in.	12¼ in.	13 in.	f7.5	44 00
12	10 x 12	12 x 15	2¼ in.	15 in.	16 in.	f8.4	56 00
15	12 x 15	15 x 18	2¾ in.	18 in.	19½ in.	f8.8	70 00
18	16 x 18	20 x 22	3¼ in.	22¼ in.	23¾ in.	f9.0	90 00
22	20 x 22	21 x 25	4¾ in.	28 in.	30 in.	f9.0	120 00

ALVAN G. CLARK LENSES.



(Full Size, $6\frac{1}{4} \times 8\frac{1}{4}$, Alvan G. Clark Lens.)

These lenses are the invention of Alvan G. Clark, the celebrated manufacturer of telescopes, and are of a construction dissimilar from anything heretofore followed, and are as striking in their results as Mr. Clark's success in the telescope objectives has been. These lenses may be used in three directions:

1. To all work to which the Rapid Rectilinear type may be adapted, when they give an angle of about 55 degrees.
2. To all work requiring a medium angle objective.
3. Then they may be used as wide-angle objectives, having an aperture of about 95 degrees, and as such can be used with larger stop than other specially constructed wide-angle lenses of the symmetrical type. They

are quite free from marginal distortion and magnified perspective, so common to lenses of this class. *When using these lenses in this capacity, care should be used in beveling the back of the front board so as to allow free passage of the rays.*

The lenses are uncemented, each lens of the combination being mounted for itself, and are therefore free from danger of gradual decrease in speed, so common in many lenses owing to the chemical change in the cement. The crown glass is on the outside, and therefore less liable to become scratched. The mountings are unusually compact, and each mounting has engraved upon it Mr. Clark's autograph as well as the firm name of Bausch & Lomb.

While these lenses are intended to be used in all out-door work, they are also suited to portraiture, particularly for groups, covering the plates for which they are rated noticeably better than any other symmetrical lenses.

These lenses are fully covered by patent.

No.	Size of Plate Working with Stop F. 1 Angle about 55 degrees.	Size of Plate Working with Stop F. 20 Angle about 75 degrees.	Size of Plate Working with Stop F. 35 Angle about 95 degrees.	Diameter of Lenses.	Back Focus.	Equivalent Focus.	Price.
3		$3\frac{1}{4} \times 4\frac{1}{4}$	$4\frac{1}{4} \times 6\frac{1}{2}$	$\frac{1}{8}$ in.	$3\frac{1}{2}$ in.	$3\frac{3}{4}$ in.	\$14 00
$4\frac{1}{4}$	$3\frac{1}{4} \times 4\frac{1}{4}$	4 x 5	5 x 8	$\frac{3}{4}$ "	$4\frac{5}{8}$ "	5 "	18 00
5	4 x 5	5 x 8	$6\frac{1}{2} \times 8\frac{1}{2}$	$\frac{7}{8}$ "	$5\frac{3}{4}$ "	$6\frac{1}{8}$ "	22 00
8	5 x 8	$6\frac{1}{2} \times 8\frac{1}{2}$	8 x 10	$1\frac{1}{8}$ "	$7\frac{3}{4}$ "	$8\frac{1}{4}$ "	28 00
$8\frac{1}{2}$	$6\frac{1}{2} \times 8\frac{1}{2}$	8 x 10	10 x 12	$1\frac{1}{2}$ "	$10\frac{3}{8}$ "	11 "	36 00
10	8 x 10	10 x 12	12 x 15	$1\frac{3}{4}$ "	$12\frac{1}{4}$ "	$13\frac{1}{4}$ "	43 00
12	10 x 12			$2\frac{1}{8}$ "	15 "	$16\frac{1}{8}$ "	60 00
15	12 x 15			$2\frac{5}{8}$ "	18 "	$19\frac{1}{4}$ "	78 00
18	16 x 18			$3\frac{1}{8}$ "	22 "	$23\frac{3}{8}$ "	100 00
22	20 x 22			$4\frac{1}{8}$ "	28 "	$29\frac{1}{2}$ "	140 00

VELOX RECTILINEAR LENS.



Full Size of 4 x 5 Velox Rectilinear Lens.

These lenses are of the symmetrical rectilinear type. They are carefully made and while they will not give such results as our Rapid Universal in definition or covering capacity, they are fully equal to any cheaper grade of lenses now on the market. They are suitable for portraiture, architectural and all kinds of out-door work with a speed equal to all shutter work.

The mountings are of the "black band" type, neatly finished and lacquered, and provided with morocco cap and a set of diaphragms in morocco case.

No.	Size of Plate. Full Opening.	Size of Plate. Small Diaphragm.	Diameter of Lens.	Back Focus.	Price.
1.....	4 x 5	5 x 8	1 inch.	5¾ in.	\$10 00
2.....	5 x 8	6½ x 8½	1⅞ "	8 "	15 00
3.....	6½ x 8½	8 x 10	1½ "	10¼ "	20 00
4.....	8 x 10	10 x 12	1⅞ "	18 "	25 00
5.....	10 x 12	12 x 15	2¼ "	15½ "	35 00
6.....	12 x 15	16 x 20	2½ "	18 "	50 00
7... ..	16 x 20	20 x 22	3 "	22½ "	70 00

VELOX WIDE-ANGLE LENS.

These lenses have an angular aperture of about 90 degrees. They give good results when used with suitable stops on interior and architectural work and can be commended for a cheap lens.

No.	Size of Plate.	Diameter of Largest Lens.	Back Focus.	Equivalent Focus.	Price.
1.....	5 x 8	1 $\frac{1}{8}$ in.	5 in.	5 $\frac{1}{2}$ in.	\$15 00
2.....	6 $\frac{1}{2}$ x 8 $\frac{1}{2}$	1 $\frac{5}{8}$ "	6 $\frac{1}{8}$ "	7 "	18 00
3.....	8 x 10	2 $\frac{1}{8}$ "	8 $\frac{1}{4}$ "	9 $\frac{1}{8}$ "	22 00
4.....	10 x 12	2 $\frac{1}{2}$ "	10 "	11 $\frac{1}{2}$ "	28 00
5.....	12 x 15	3 $\frac{1}{2}$ "	16 "	14 $\frac{1}{2}$ "	35 00

SINGLE ACHROMATIC LENSES.

These lenses are carefully made up of a positive crown and negative flint glass lens. They give the best possible spherical correction of this construction and make the photographic image coincident with the ground glass.

They are also supplied in neat brass mountings, nicely finished and lacquered, which are provided with revolving diaphragms and morocco cap.

No.	Size of Plate.	Diameter of Lens.	Focus.	Price Un-mounted.	Price mounted.
1.....	2 $\frac{1}{8}$ x 3 $\frac{1}{4}$	$\frac{5}{8}$ in.	4 in.	\$1 00	\$2 75
2.....	3 $\frac{1}{4}$ x 4 $\frac{1}{4}$	1 "	5 $\frac{1}{8}$ "	1 20	2 75
3.....	4 x 5	1 $\frac{1}{4}$ "	6 $\frac{1}{4}$ "	1 50	3 00
4.....	5 x 8	1 $\frac{3}{8}$ "	9 "	2 00	4 50
5.....	6 $\frac{1}{2}$ x 8 $\frac{1}{2}$	1 $\frac{3}{4}$ "	11 "	2 50	6 00
6.....	8 x 10	2 "	13 "	3 00	8 00

ZEISS-ANASTIGMAT LENSES.

For several years past the members of the Scientific Department of the Optical Works of Carl Zeiss, Jena, have been engaged in theoretically and practically investigating the possible means of improving photographic lenses afforded by the extensive material placed at the disposal of practical opticians by the glassworks of Messrs. Schott & Co., of Jena.

These investigations have resulted in the construction of a new type of photographic lenses, which essentially differ in principle from all other lenses and which, from their apparent advantages from the critique of numerous experts, are in several respects superior to any of the lenses hitherto constructed.

This type is of the double form and is the invention of Dr. P. Rudolph. It consists of two compound lenses each of which is composed of single lenses cemented together. Each of these compound lenses is, as in other types, in itself achromatic; but they possess this characteristic peculiarity that in the one the positive element (the collective lens) has a smaller refractive index than the negative element (dispersive lens), while in the other the positive element has a greater refractive index than the negative element cemented thereto.

The plan of thus employing in an optical system achromatic members composed of elements possessing opposite optical properties has become practicable through the judicious application of the barium-silicate glasses of relatively high refractive power. The advantage resulting from combining elements of such opposite properties so as to form achromatic doublets consists in the means thereby obtained of completely compensating the astigmatic aberrations of oblique pencils without detriment to the aplanation of a large field. Accordingly, the doublets constructed after this plan, which we shall henceforth call ANASTIGMATIC LENSES, exhibit unusual uniformity of definition over a large field, even when large apertures are being used. This advantage becomes particularly apparent in such cases where, with relatively large apertures, it is required that center and margin should have the same depth of focus.

In computing the Anastigmatic lenses particular importance has besides been attached to greatest possible uniformity of illumination of the field.

The improved compensation of astigmatic aberrations and the better correction of the marginal portions of the field resulting therefrom give *per se* rise to a diminution of the ratio in which the intensity of illumination decreases from the centre to the margin. This effect is enhanced by the very small distance between the two members constituting these doublets; for, let us add, this distance, and in consequence, the length of the entire objective, is considerably less than that of lenses constructed after the type of Aplanatic lenses. Besides, the diameters of the lenses have been taken considerably larger than those of the widest diaphragms supplied with each lens.

In consequence of the peculiar systems of correction for oblique pencils adopted in these lenses they behave somewhat differently from the usual types with regard to the mode of compensating the effect of the resulting aberrations between centre and margin of the field. This is, of course, only possible in the case of perfectly plane objects. In all other other cases (landscapes, instantaneous work or interiors) the centre should be focused, rather for objects at a distance than for near objects.

The lenses of either type are chromatically corrected for both the axial and extra-axial portions of the field; the photographic image is coincident with the visually focused image and both are of equal magnitude. The lenses are, therefore, free from difference of focus and chromatic difference of magnification.

They are spherically corrected for the aperture of the largest of the diaphragms supplied with each lens, and a sharp image is, therefore, obtainable even with this largest diaphragm. Focusing is, accordingly, not affected by interchange of diaphragms and the plate may be focused with any diaphragm either than that which is to be actually employed during exposure.

In computing the formulae, particular attention has been paid to compensating, as far as possible, the evil effects arising from reflexions. All the images due to reflection have successfully been brought into such positions as not to exercise any prejudicial influence on the "brilliancy" of the image.

The glasses used for these lenses are, exclusively, very colorless silicate glasses and are in a high degree transparent to actinic rays. The lenses are, therefore, rapid in proportion to their effective aperture and thus satisfy one of the great wishes of photographers, viz.: combination of rapidity with depth of focus.

ADVANTAGES OF THE ZEISS-ANASTIGMAT LENSES.

After a description of the technical construction and theoretical points involved, it may be asked, what are the practical advantages? They may be enumerated as follows:

FREEDOM FROM ASTIGMATISM.

Astigmatism is a fault which exists to a greater or less extent in all lenses of symmetrical type, and is of greater seriousness than is generally appreciated. It can be easily determined on a test board having a series of parallel vertical and horizontal lines. In all symmetrical lenses it will be found that when focused in the center, one series of lines toward and near the margin of a plate are comparatively distinct, while the others are decidedly out of focus, or when focused on the margin of a plate so that one series will appear sharp, those in the other direction are indistinct and vice versa.

The Anastigmats are entirely free from this fault and are not approached by any known lens. They are also for this reason in the strictest sense rectilinear.

WIDE-ANGLE LENSES FREE FROM DISTORTION.

These lenses, while they will be used most extensively for portraiture, view work, and copying under conditions such as the symmetrical rectilinear type are used at present, are wide-angle lenses of different degrees of angle, and as such are the only ones extant which can be used with full opening. Further than this, they give a width of angle not approached by any other lenses.

THE PHOTOGRAPHED IMAGE IS EXACTLY COINCIDENT WITH THE VISUAL
FOCUSED IMAGE, AND BOTH ARE OF EQUAL MAGNITUDE.

The lenses are therefore free from difference of focus, and chromatic difference of magnification, so that absolute dependence may be placed upon the fact that the photographed image will exactly coincide with that on the ground glass, and be of the same size.

EXTREME FLATNESS OF FIELD.

The correction of the astigmatic aberration means improved correction at the margin, but besides this the flatness has been kept constantly in view and has been accomplished to a greater degree than in any existing lenses.

NO FLARE SPOT OR GHOST.

These lenses do not have this serious fault, even when dazzling light enters the lenses.

ABSOLUTE UNIFORMITY OF ILLUMINATION OVER THE FIELD.

UNUSUAL DEPTH TO THE PROPORTION OF APERTURE.

NO VARIATION OF FOCUS WITH VARIATION IN DIAPHRAGM.

REMARKS.

The mountings of all of these lenses are of the neat design and as light as is compatible with strength. As a distinguishing feature the front and back mount is provided with a hollow bright black band. All are marked with the size of plate for which they are intended, Zeiss-Apastigmat, the series to which they belong, date of American patent, Bausch & Lomb Optical Co., and number of lens in the order given.

The sizes of plates given in the lists represent the covering powers corresponding to the stop indicated at the head of the column of plate-sizes. In supplying these figures it is implied that, as is required for for usual work (landscape and instantaneous photography), the focusing produces *perfect sharpness up to the margin* and that the illumination is uniform from the center to the margin.

Where these restrictions do not exist, plates of considerably larger sizes may be used.

The diameters of the image circles contained in the third column imply focusing of distant objects; these diameters represent the guaranteed *minimum* in each case and are obtainable with sufficient sharpness even with the smallest stops. The actual image circle obtained with a small stop is in nearly all cases even larger.

The greatest possible care is taken in construction and none is sent out until it has been rigidly tested and found to come up to its standard efficiency.

The designers of these lenses are known to the optical world as being conservative in their statements, and we find that their tables of capacity of the lenses are, if anything, under-estimated. We deem it proper to state this, as at the present day it is customary for makers of other lenses to go to the other extreme.

The fact that the introduction of these lenses and other photographic products is entrusted to our firm by its well-known inventors, is evidence of our ability to undertake it successfully. Complete arrangements have been made to meet any demand and we anticipate no difficulty in meeting all orders promptly.

Besides sending out these lenses to responsible parties for examination and comparison, we send with each one a test chart so that proper comparisons can be made on those points which we consider to be the unusual merits of these lenses.

LIST OF PUBLICATIONS.

TREATING ON THESE OBJECTIVES.

- VOGEL, Prof. H. V. Berichte desselben über die Zeiss'schen Objective. Photographische Mittheilungen, 1890-91, p. 80, 93.
- PHOTOGRAPHISCHE MITTHEILUNGEN, 1890-91, p. 84, 85; "Carl Zeiss' neue photographische Objective."
- BRITISH PATENT SPECIFICATION No. 6,028 (Doublet). See 1890, p. 443.
- EDER, Dr. J. M. Mittheilungen der k. k. Lehr- und Versuchsanstalt für Photographie und Reproductionssverfahren in Wien; "Neue photographische Objective von C. Zeiss in Jena." Photographische Correspondenz, 1890, p. 355; Jahrbuch für Photographie und Reproductionstechnik, p. 367.
- VOGEL, Prof. H. W. "New Photographic Lenses," British Journal of Photography, 1890, p. 522.
- PHOTOGRAPHISCHE MITTHEILUNGEN, 1890-91; German translation of British Patent Specification, 6,028 (Doublet), p. 158, 174 and 208.
- PHOTOGRAPHISCHE NACHRICHTEN, 1890, p. 487. Extract from German Patent Specification (Triplet), see p. 506 (Doublet).
- STOLZE, Dr. F. Objectivuntersuchungen. II. Objective von Carl Zeiss in Jena, Photographische Nachrichten, 1890, p. 514 and seq., 529.
- BRITISH JOURNAL OF PHOTOGRAPHY, 1890. See, Testing the new Zeiss' Objectives, p. 604, 616.
- EDER, Dr. J. M. Zeiss' New Objectives, British Journal of Photography, 1890, p. 729.
- VAN HEURCK, Dr. Henri. "Les Nouveaux Objectives Photographiques de M. M. Zeiss," Bulletin de l'Association Belge de Photographie, 1890.
- RUDOLPH, Dr. P. "Ueber den Astigmatismus photographischer Linsen," Eder's Jahrbuch für Photographie und Reproduction, 1891, p. 225.
- SORET, Prof. A. Optique Photographique, Paris, Gauthier, Villars et fils, 1891, p. 70.
- ROSTER, Prof. Giorgio. "I Nuovi Obiettivi Fotografici dello Zeiss," Bollettino della Societa fotografica Italiana, 1891, p. 43.
- EDER, J. M. Certificat der k. k. Lehr- und Versuchsanstalt für Photographie und Reproductionsverfahren in Wien. Anastigmat 1:18. $f = 205$ mm. and $f = 947$ mm. betr., vom 18. April, 1891.
- FABRE, Dr. C., Toulouse. "Les Nouveaux Objectives de Zeiss," Aide-Mémoire de Photographie pour 1891 de Fabre, and Bulletin de la Société française de Photographie, Avril, 1891.

ZEISS-ANASTIGMAT.

SERIES III.

1 : 7.2

FOR INSTANTANEOUS WORK, STUDIO WORK ON GROUPS AND LARGE HEADS, OUT-DOOR WORK OF ALL KINDS AND COPYING.



FULL SIZE, No. 4.

The lenses of this series are double unsymmetrical combinations, consisting of a front combination of two lenses and a back system to three lenses. They are placed close together although the space between them is in all except Nos. 1 and 2 sufficient to admit of the introduction of our Diaphragm Shutter.

The lenses of this series have an angular aperture from 85 to 90 degrees, and can therefore be used as wide-angle lenses if desired. The relative diameter of lenses is about 1 to 6. The largest stop, however, is *f.* 7.2. As indicated above, they are intended for use in all kinds of photographic work except in poorly lighted studios. They have a greater speed than almost all rapid lenses now in the

market, and for copying particularly have no equal for the same aperture.

A full set of Waterhouse diaphragms in morocco case and morocco cap are supplied with each lens.

No.	Size of Plate Covered with Stop F. 12.5.	Diameter of Image Circle at 80 degrees.	Free Diameter of largest Lens.	Equivalent Focus.	Price.
1.....	3 $\frac{1}{4}$ x 4 $\frac{1}{4}$	6 $\frac{5}{8}$ in.	5 $\frac{5}{8}$ in.	8 $\frac{1}{2}$ in.	\$29 00
2.....	4 x 5	7 $\frac{7}{8}$ "	3 $\frac{3}{4}$ "	4 $\frac{3}{4}$ "	33 00
3.....	4 $\frac{1}{4}$ x 6 $\frac{3}{8}$	9 $\frac{1}{8}$ "	1 "	5 $\frac{1}{4}$ "	37 00
4.....	5 x 7	13 "	1 $\frac{1}{4}$ "	7 $\frac{1}{4}$ "	50 00
5.....	5 x 8	14 $\frac{1}{2}$ "	1 $\frac{7}{8}$ "	8 $\frac{1}{4}$ "	62 00
6.....	6 $\frac{1}{2}$ x 8 $\frac{1}{2}$	16 $\frac{3}{4}$ "	1 $\frac{5}{8}$ "	9 $\frac{1}{4}$ "	75 00
7.....	8 x 10	20 $\frac{1}{8}$ "	2 "	12 $\frac{1}{4}$ "	100 00
8.....	10 x 12	29 $\frac{1}{8}$ "	2 $\frac{1}{2}$ "	17 $\frac{3}{8}$ "	157 00
9.....	12 x 15	33 $\frac{3}{8}$ "	3 $\frac{1}{8}$ "	28 $\frac{1}{8}$ "	223 00

ZEISS-ANASTIGMAT.

SERIES IV.

1 : 12.5.

FOR INSTANTANEOUS WORK, LANDSCAPES, INTERIORS, ARCHITECTURE
AND COPYING.

The lenses of this series form two unsymmetrical systems, both of which are composed of two cemented lenses, placed close together, although the numbers above No. 5 will admit of the adaptation of Diaphragm Shutter.

The field of the smaller lenses, including No. 6, measures an angle of 100 degrees, while in the larger ones it is about 85 degrees. The smaller numbers, including No. 6, admit of a pencil of relative aperture 1 : 10 and the larger ones 1 : 12. The large stop has an aperture of *f.* 12.5.

This series is therefore wide-angle and as such may be used for all out-door work with full aperture, which has unusual value in a large variety of work. It is of course understood that they may be used on smaller plates with correspondingly reduced angle.

The mountings of the smaller numbers, including No. 5, are provided with revolving diaphragms and the larger ones with Waterhouse diaphragms.



FULL SIZE, No. 5.

No.	Size of Plate Covered with Stop F. 18.	Diameter of Image Circle at 96 degrees.	Free Diameter of largest Lens.	Equivalent Focus.	Price.
1.....	3 1/4 x 4 1/4	5 1/2 in.	1 1/4 in.	2 7/8 in.	\$27 00
2.....	4 x 5	8 1/4 "	3/4 "	3 3/8 "	27 00
3.....	4 1/4 x 6 1/2	10 5/8 "	1 1/8 "	4 1/4 "	27 00
4.....	5 x 8	13 3/8 "	5/8 "	6 1/4 "	33 00
5.....	8 x 10	17 1/4 "	1 1/8 "	7 1/4 "	42 00
6.....	10 x 12	22 1/4 "	1 "	10 1/4 "	62 00
The following sizes for copying with stop F. 86 at 85 degrees. For landscape work larger plates may be used.					
7.....	12 x 15	27 1/4 in.	1 5/8 in.	15 1/8 in.	83 00
8.....	16 x 20	43 1/4 "	2 1/8 "	23 1/4 "	145 00
9.....	20 x 24	64 1/4 "	2 1/2 "	35 1/4 "	330 00
10.....	24 x 30	86 1/4 "	3 3/8 "	48 3/8 "	743 00

ZEISS ANASTIGMAT.

SERIES V.2

f 18.

WIDE-ANGLE FOR COPYING, INTERIORS, ARCHITECTURE AND LANDSCAPES.



FULL SIZE, No. 6.

are supplied with Waterhouse diaphragms.

The lenses of this series are similar in construction to those of Series IV, the numbers above No. 5 admitting of the fitting of the Diaphragm Shutter.

The field of the smaller numbers, including No. 7, measures 108 degrees, while that of the larger ones is 90 degrees and above.

In the smaller sizes, including No. 7, the ratio of aperture to focus is about 1:18 and the larger ones 1:17. The largest stop has an aperture of f 18.

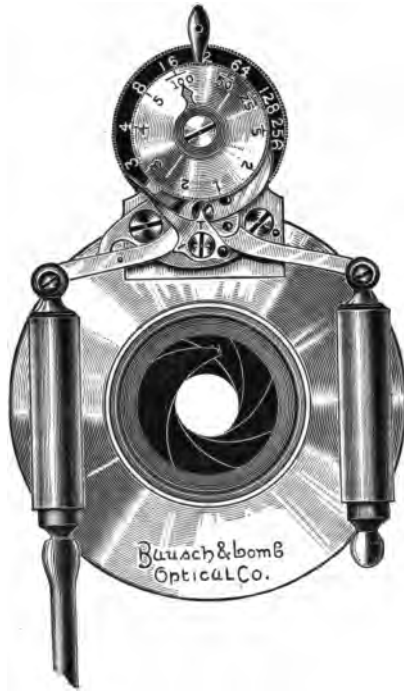
The smaller numbers of this series are wide-angle lenses proper and, in spite of their very wide-angle, sufficiently rapid to be available for instantaneous work with sunlight illumination. Considering the unequaled extent of angle this capacity is unapproached by any known lenses. They are, therefore, useful for many purposes. The entire field is orthoscopic, notwithstanding the dissymmetrical construction of the lens.

The larger lenses, of $18\frac{1}{2}$ focus and upwards, are in particular intended for reproductions of charts; they yield a perfectly flat and anastigmatic image subtending an angle of 90 degrees and are perfectly free from distortion. Even with stop 1:18 the picture exhibits the sharpness of an engraving.

The mountings are similar in construction to those of Series IV., and have the same general appearance. All the smaller sizes, including No. 6, have revolving diaphragm and the larger sizes

No.	Size of Plate Covered with Stop F. 86.	Diameter of Image Circle at 104 degrees.	Free Diameter of largest Lens.	Equivalent Focus.	Price.
1.....	4 $\frac{1}{4}$ x 6 $\frac{1}{2}$	8 $\frac{1}{4}$ in.	$\frac{3}{8}$ in.	3 $\frac{3}{8}$ in.	\$27 00
2.....	5 x 7	11 " "	$\frac{7}{8}$ " "	4 $\frac{3}{8}$ " "	27 00
3.....	6 $\frac{1}{2}$ x 8 $\frac{1}{2}$	14 $\frac{1}{8}$ " "	1 $\frac{1}{2}$ " "	5 $\frac{1}{4}$ " "	83 00
4.....	8 x 10	15 $\frac{3}{4}$ " "	1 $\frac{3}{4}$ " "	7 $\frac{1}{4}$ " "	42 00
5.....	10 x 12	21 $\frac{1}{4}$ " "	1 $\frac{7}{8}$ " "	8 $\frac{3}{8}$ " "	50 00
6.....	11 x 14	26 $\frac{3}{4}$ " "	1 $\frac{13}{16}$ " "	10 $\frac{7}{8}$ " "	62 00
7.....	12 x 15	31 $\frac{1}{2}$ " "	1 $\frac{15}{16}$ " "	12 $\frac{1}{8}$ " "	75 00
For reproductions of charts and all kinds of copying on large plates when used at an angle of 86 degrees.					
8.....	12 x 15	33 $\frac{1}{4}$ in.	1 in.	18 $\frac{1}{2}$ in.	\$99 00
9.....	16 x 18	45 $\frac{1}{4}$ " "	1 $\frac{3}{8}$ " "	24 $\frac{7}{8}$ " "	145 00
10.....	20 x 25	68 $\frac{1}{8}$ " "	2 $\frac{1}{8}$ " "	37 $\frac{1}{8}$ " "	290 00
11.....	28 x 34	94 $\frac{1}{2}$ " "	3 " "	51 $\frac{1}{8}$ " "	495 00
12.....	36 x 44	118 $\frac{1}{8}$ " "	3 $\frac{1}{4}$ " "	65 $\frac{1}{8}$ " "	825 00

DIAPHRAGM SHUTTER.



Since the first introduction of our Iris Diaphragm Shutters, they have constantly grown in favor and are to-day without question the leading shutters in the market. The advantages of the principles involved, have been so apparent that they have from the outset been fully appreciated. It requires little argument to show that the proper place for opening and closing a shutter is in the optical axis of the lens, and in both time and instantaneous photography, it is evident that this shutter, starting its opening with a pin-hole and gradually increasing to the size of stop for which it is set, and returning in the same manner, will give the effect of a small stop, *i. e.*, more depth, flatness and equality of illumination. Comparative tests show that in practice these advantages are obtained to a marked degree.

This shutter meets every requirement of gallery and out-door work; we disclaim, however, its suitability to so-called "lightning work," although surprising results, such as trains running 60 miles per hour and trotting horses, of which samples have been sent us, show its capacity under suitable management. For all other work it has no rival, either in its results, advantages, conveniences or workmanship.

It is provided with safety device, so that in setting shutter the blades are not opened and can therefore make no exposure.

The advantages of this shutter are as follows :

There are no loose stops.

The variation in size of stop is made by turning the black disk which is supplied with a large index.

Absolute control of time exposure.

Large index giving correct indications of time from 8 seconds to $\frac{1}{100}$ second.

Entire independence of speed regulation from the influence of temperature or humidity.

By turning a lever it is set for either time or instantaneous exposure, and remains so set until changed.

The movement during exposure is almost absolutely free from concussion.

All parts which must be manipulated are placed at the front, easy of access.

We guarantee that the shutters and barrels are absolutely true and optically centered, whether arranged for our lenses or others.

While we have sample barrels of almost all known lenses, we find that there is a variation in the thread of almost all makes. We will therefore *assume no responsibility* in fitting the same, except when complete lenses are sent to us to be fitted.

When fitted to Rapid Universal or Alvan G. Clark Lenses.		With extra Barrel and Dia- phragm	Zeiss- Anastigmat, Series III., Extra Barrel.	Zeiss- Anastigmat, Series IV., Extra Barrel.	Zeiss- Anastigmat, Series V., Extra Barrel.	When fitted to Lenses of Other Manu- facture, leav- ing barrel Intact.
$3\frac{1}{4} \times 4\frac{1}{4}$	\$12 50	\$14 00				$\frac{3}{8}$ in.* \$14 50
4×5	12 50	14 00				$\frac{1}{2}$ " 14 50
5×8	13 50	15 00	No. 3 \$15 00	No. 6 \$15 00	No. 6 } No. 7 } \$15 00 No. 8 }	$1\frac{1}{8}$ " 15 50
$6\frac{1}{2} \times 8\frac{1}{2}$	14 50	16 00	No. 4 } No. 5 }	No. 7 16 00	No. 9 16 00	$1\frac{1}{4}$ " 16 50
8×10	16 00	17 50	No. 6 17 50	No. 8 17 50	No. 10 17 50	$1\frac{3}{4}$ " 18 00

* Opening of Diaphragm.

Stereoscopic attachment, both shutters working in unison, extra.... \$6 00

To graduate disk to correspond with diaphragms accompanying

lens, extra..... 1 00

JAMES SWIFT & SON'S
(LONDON, ENGLAND)
PARAGON LENSES.

WE take great pleasure in announcing to American photographers that henceforth we shall be enabled to supply them with **JAMES SWIFT & SON'S PARAGON LENSES.**

The reputation of these lenses abroad is superior to that of any other make. They have been selected by the following named institutions because of their unequalled qualities and excellence :

The Scientific Department of the English Government in England, Calcutta and Bengal.

The Universities of Oxford and Cambridge, King's College and Edinburgh University College Schools.

Owens College, Manchester, besides the Governments of France, Germany and Italy.

The **SWIFT LENSES** have been awarded no less than seven gold medals, besides numerous diplomas of honor.

The lenses are manufactured from the new Abbe-Schott glass, which is undoubtedly more uniform in quality and specific gravity than the best optical flint and crown glass heretofore made ; hence the lenses are of a uniformly superior quality.

The Rapid and Portable Paragon Lenses

Are supplied with Iris Diaphragms, and mounted in brass as well as aluminum ; while the **WIDE-ANGLE PARAGON LENSES** are fitted with Revolving Diaphragms.

On the following pages will be found a description of the various styles of **SWIFT LENSES** which we carry in stock.

THE SCOVILL & ADAMS Co.,

SOLE AGENTS IN AMERICA,

423 BROOME STREET, NEW YORK.

NEW PORTABLE LONG FOCUS LANDSCAPE LENSES.

Effective working aperture U. S. No. 8, $f/11.314$, this being double the rapidity of any other portable series made.

JAMES SWIFT & SON beg to inform professional and amateur photographers that the undermentioned series of Lenses have been designed to meet a wide-felt want. Each Lens in first series is composed of three glasses, cemented together, thus presenting but two reflective surfaces.

For covering power, these Lenses will prove to be of about half the diameter of those usually employed upon a similar sized plate.

J. SWIFT & SON guarantee these Lenses to produce pictures containing panoramic and aerial perspective, such as cannot be obtained with Lenses of shorter focus. They will be a great boon in photographing mountainous scenery or exceptionally distant landscapes. Owing to their great focal length, the most distant objects (that would otherwise be lost to view with a Lens of ordinary focus for same covering power) are rendered perfectly and clearly defined. The list below is the first of its class that has ever been introduced to the notice of photographers, and J. S. & Son are confident that the great care and attention which have been bestowed on its compilation will be duly appreciated. Waterhouse Diaphragms marked as below are supplied in a case with each Lens.

		U. S. Nos.		8	16	32	64	128	256				
				11.314	16	22.627	32	45.255	64				
Working Intensity.	No.	Size of Plate.	Diameter of Lenses.	Equiva- lent Focus.	Price with Waterhouse Diaphragm.	Price with Iris Diaphragm.	Working Intensity.	No.	Size of Plate.	Diameter of Lenses.	Equiva- lent Focus.	Price with Waterhouse Diaphragm.	Price with Iris Diaphragm.
U. S. No. 8, $f/11.314$		Inches.	Ins.	Ins.			U. S. No. 8, $f/11.314$		Inches.	Ins.	Ins.		
	1	5 x 4	1 $\frac{1}{2}$	9	\$21 25	\$26 65		6	12 x 10	2 $\frac{1}{2}$	30	\$45 40	\$50 80
	2	6 x 5	1 $\frac{3}{4}$	11	23 50	28 20		7	13 x 11	2 $\frac{1}{2}$	32	49 00	55 10
				14	27 00	32 50		8	15 x 12	2 $\frac{1}{2}$	33	50 40	56 50
	3	8 $\frac{1}{2}$ x 6 $\frac{1}{2}$	1 $\frac{1}{2}$	14	29 25	34 60		9	18 x 16	2 $\frac{3}{4}$	38	57 25	64 50
				16	32 40	37 80		10	22 x 18	3	41	64 80	72 00
	4	9 x 7	1 $\frac{3}{4}$	16	32 40	37 80		11	25 x 22	3 $\frac{1}{4}$	54	90 75	99 75
				18	34 20	39 60		12	28 x 24	4	58	123 15	132 15
	5	10 x 8	2	18	35 70	41 10						144 00	158 00
				20	39 25	44 70							

Intermediate or Longer Focus Lenses to those mentioned in above list made to order.

Second series composed of two glasses, working aperture same as first series.

Working Intensity.	No.	Size of Plate.	Diameter of Lenses.	Equiva- lent Focus.	Price with Waterhouse Diaphragm.	Price with Iris Diaphragm.
U. S. No. 8, $f/11.314$.		Inches.	Inches.	Inches.		
	1a	5 x 4	1 $\frac{1}{2}$	7 $\frac{1}{2}$	\$12 00	\$17 30
	2a	6 x 5	1 $\frac{3}{4}$	8 $\frac{1}{2}$	14 50	19 80
	3a	8 $\frac{1}{2}$ x 6 $\frac{1}{2}$	1 $\frac{1}{2}$	12	19 80	25 25
	4a	9 x 7	1 $\frac{3}{4}$	13	21 60	27 00
	5a	10 x 8	2	15	24 15	29 50
	6a	12 x 10	2 $\frac{1}{4}$	17	30 00	35 30
	7a	13 x 11	2 $\frac{1}{4}$	18	32 40	37 80
	8a	15 x 12	2 $\frac{1}{2}$	22	36 00	41 40
	9a	18 x 16	3 $\frac{1}{4}$	25	44 00	51 15

SWIFT & SON'S **First Series of Wide-Angle Landscape Triple Lenses,**

The Effective Working Aperture of which is U. S. No. 4, or f 8.

Each of these Lenses is composed of three distinct single ones cemented together, producing brilliant negatives of landscapes, pure and simple. This result is due to the fact of there being only two reflecting surfaces. Architectural subjects are not so satisfactorily rendered when taken with a single as with a double combination, such as the RAPID PARAGON, it being impossible to correct single combinations so as to produce straight lines at the margin of the plate.

This First Series being composed of a triple combination gives finer pictures than the Second Series, which is formed of two single Lenses only, it being a recognized fact that a triple or three-fold combination produces a considerably flatter field than that consisting of but two.

Messrs. J. S. & SON guarantee their First Series to produce more satisfactory results than can be obtained with any other Landscape Lens now before the public, whether used for large heads, groups, or instantaneous effects.



LANDSCAPE LENS. 5 X 4 WIDE ANGLE.
 (Actual Size.)

U. S. Nos.	4	8	16	32	64	128	256
	f 8	f 11.314	f 16	f 22.627	f 32	f 45.255	f 64

Working Intensity.	No.	Size of Plate	Diameter of Lenses.	Equivalent Focus.	Price with Waterhouse Diaphragm.	Price with Iris Diaphragm.
		Inches.	Inches.	Inches.		
U. S. No. 4, f 8.....	1	5 x 4	1 3/4	5 1/4	\$21 25	\$26 65
"	2	6 x 5	1 1/2	6	22 35	28 50
"	3	7 1/4 x 5	1 1/4	7	23 40	30 00
"	4	8 1/2 x 6 1/2	1 1/4	8 1/2	29 20	35 70
"	5	10 x 8	2 1/4	10	35 65	41 00
"	6	12 x 10	2 1/2	12	35 40	51 15
"	7	15 x 12	2 3/4	15	57 25	62 65
"	8	18 x 16	3	18	68 00	75 60
"	9	22 x 20	3 3/4	22	90 75	98 25
"	10	25 x 21	4 1/4	25	123 15	130 35

Second Series, same working intensity as First Series.

U. S. Nos.	4	8	16	32	64	128	256
	f 8	f 11.314	f 16	f 22.627	f 32	f 45.255	f 64

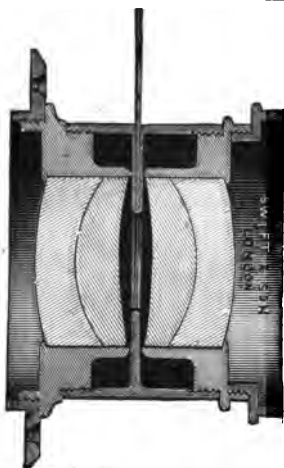
Working Intensity.	No.	Size of Plate.	Diameter of Lenses.	Equivalent Focus.	Price with Waterhouse Diaphragm.	Price with Iris Diaphragm.
		Inches.	Inches.	Inches.		
U. S. No. 4, f 8. ...	1a	5 x 4	1 3/4	5 1/4	\$14 40	\$19 80
"	2a	6 x 5	1 1/2	6	18 00	23 40
"	3a	7 1/4 x 5	1 1/4	7	19 80	26 20
"	4a	8 1/2 x 6 1/2	1 1/4	8 1/2	23 75	29 20
"	5a	10 x 8	2 1/4	10	30 00	35 30
"	6a	12 x 10	2 1/2	12	36 00	41 40
"	7a	15 x 12	2 3/4	15	44 00	50 00
"	8a	18 x 16	3	18	55 80	61 20
"	9a	22 x 20	3 3/4	22	72 00	79 20
"	10a	25 x 21	4 1/4	25	104 00	111 25

SWIFT & SON'S PORTABLE PARAGON LENSES

SPECIALLY CONSTRUCTED FOR

LANDSCAPES, ARCHITECTURE AND COPYING,

Giving either Wide, Medium or Ordinary Angles, according to the Diaphragm used.



No. 6. PORTABLE PARAGON,
Actual Size.

Are universally used by most of our eminent photographers; this is attributed to their extraordinary definition and flatness of field, as well as the portable way in which they are mounted.

No. 1 to No. 10 being set in a cell $1\frac{1}{2}$ diameter, the same flange answers for all the above sizes.

With No. 1 to No. 6 a thin Revolving Diaphragm is used. All the other sizes are supplied with Waterhouse Diaphragms, the apertures used being those recommended by the Photographic Society of Great Britain as follows:

U. S. Nos.	8	16	32	64	128	256
	11.814	16	22.637	32	45.265	64

Working Intensity.	No.	Large Stop Covering.	Medium Stop Covering.	Small Stop Covering.	Equivalent Focus	Price with Revolving Diaphragm.	Price with Iris Diaphragm.
U. S. No. 8, 11.814..	1	8 x 8	4 x 8	5 x 4	3 ins.	\$19 50	\$25 00
" ..	2	4 x 8	5 x 4	7½ x 4½	4 "	21 00	26 20
" ..	3	5 x 4	7½ x 4½	8 x 5	5 "	22 75	28 10
" ..	4	7½ x 4½	8 x 5	8½ x 6½	6 "	25 95	31 25
" ..	5	8 x 5	8½ x 6½	9 x 7	7 "	28 40	37 80
" ..	6	8½ x 6½	9 x 7	10 x 8	8 "	40 00	44 80
" ..	7	9 x 7	10 x 8	12 x 10	9 "	45 50	50 75
" ..	8	10 x 8	12 x 10	13 x 11	10 "	52 00	57 25
" ..	9	12 x 10	13 x 11	15 x 12	12 "	58 40	63 75
" ..	10	13 x 11	15 x 12	18 x 16	15 "	64 80	68 00
" ..	11	15 x 12	18 x 16	22 x 18	18 "	77 75	85 00
" ..	12	18 x 16	22 x 20	25 x 21	21 "	97 25	104 40
" ..	13	20 x 18	24 x 22	28 x 23	24 "	129 60	136 80
" ..	14	22 x 20	26 x 24	31 x 25	27 "	169 20	178 20
" ..	15	24 x 22	28 x 26	34 x 28	30 "	207 40	216 50
" ..	16	26 x 24	30 x 28	37 x 31	34 "	259 20	268 20

SWIFT & SON'S

Are composed of two symmetrically cemented combinations, which are aplanatic, *i. e.*, they work with the full opening, thus imparting considerably more light to the sensitive plate than any other rapid out-door lens yet made, whether English or foreign. Their superiority in all kinds of out-door pictures, whether for portraits, groups, instantaneous effects, landscapes, architectural subjects (giving straight lines to the edge of the plate), or dimly lighted interiors, they are unrivaled. For copying and enlarging purposes these Lenses are unique, and have been supplied to home and foreign governments. With smaller stops, each Lens will cover the next or even two sizes larger plates than recorded, thus embracing angles of pictures from 60 to 80 degs., spot.



6 x 5 RAPID PARAGON, fitted with Iris Diaphragm (Actual Size).

Waterhouse Diaphragms marked thus: .								
U. S. Nos.	2 5.657	4 8	8 11.814	16 16	32 22.627	64 32	128 45.255	256 64
Working Intensity.	Size of View.	Size of Group.	Diameter of Lenses.	Equivalent Focus.	Price in Rigid Settings and Waterhouse Diaphragms.	Price with Iris Diaphragm.		
U. S. No. 2 / 5.657....	3 x 3	.....	3/4 ins.	3 in.	\$22 70	\$28 00		
" " " " " " " "	4 x 3	.....	3/4 "	4 1/2 "	26 00	31 25		
" " " " " " " "	5 x 4	4 1/4 x 3 1/4	1 "	6 "	27 50	32 75		
U. S. No. 306 / 7.....	6 x 5	5 x 4	1 1/4 "	7 1/2 "	34 00	39 40		
" " " " " " " "	8 x 5	7 1/4 x 4 1/4	1 3/4 "	9 "	37 25	42 70		
U. S. No. 4 / 8.....	8 1/2 x 6 1/2	8 x 5	1 1/2 "	11 "	42 30	47 70		
" " " " " " " "	9 " x 7 "	8 1/4 x 6 1/4	1 3/4 "	12 "	48 60	54 00		
" " " " " " " "	10 x 8	8 1/2 x 6 1/2	2 "	14 "	54 75	60 15		
" " " " " " " "	12 x 8	10 x 8	2 1/4 "	16 "	68 00	75 25		
" " " " " " " "	12 x 10	10 x 8	2 "	14 "	68 00	75 25		
" " " " " " " "	12 x 10	10 x 8	2 "	16 "	68 00	75 25		
" " " " " " " "	13 x 11	11 x 9	2 1/2 "	18 "	74 50	82 50		
" " " " " " " "	15 x 12	13 x 11	2 3/4 "	20 "	93 60	102 60		
" " " " " " " "	18 x 16	15 x 12	3 "	24 "	120 00	131 40		
" " " " " " " "	22 x 18	18 x 16	3 1/2 "	30 "	162 00	174 60		
" " " " " " " "	25 x 22	22 x 18	4 "	34 "	194 40	208 80		
" " " " " " " "	28 x 24	25 x 20	4 1/2 "	38 "	259 20	280 80		
" " " " " " " "	32 x 28	28 x 24	5 "	44 "	367 20	396 00		
" " " " " " " "	36 x 31	31 x 27	5 1/2 "	52 "	482 40	511 20		
" " " " " " " "	40 x 35	36 x 32	6 "	58 "	612 00	648 00		

* Extensively used by professional photographers where position will not allow of the use of a 16 inch focus lens. For general work J. S. & Son recommend the 12 x 10 16-inch focus.

SWIFT & SON'S UNIVERSAL PARAGON LENSES

FOR

Portraits, Groups, Studies in Studio and Panel Pictures.

For general purposes and ordinary studio work, the Universal Paragon Lenses will be found very useful all-round Lenses. Their rapidity is double that of the Rapid Paragons.

They will produce negatives that will bear enlarging many diameters. Nos. 4 and 5 are particularly well adapted for first-class panel pictures and large heads. They possess excellent covering power and give a very flat field, perfectly free from distortion.

These Lenses are also useful for outdoor work, such as landscapes, architecture, "giving perfectly straight lines to the margin of the plate" and instantaneous effects, embracing sufficient angle to give pictorial effects when suitable stops are used.



NO. 1 UNIVERSAL PARAGON.
(Half Actual Size.)

The Universal Paragon may be said to possess properties between the Portrait Lens and Rapid Paragon.

Waterhouse Diaphragms marked as below :

U. S. Nos.	2	4	8	16	32	64	128
	$\frac{5.657}{f}$	$\frac{8}{f}$	$\frac{11.314}{f}$	$\frac{16}{f}$	$\frac{22.627}{f}$	$\frac{32}{f}$	$\frac{45.255}{f}$

Specimens can be seen at our Works taken in some of the principal London Studios with the above Lenses.

Working Intensity.	No.	View Size.	Group Size.	Diameter of Lenses.	Back Focus.	Price in Rigid Mounts and Waterhouse Diaphragms.	Price with Iris Diaphragm.
				Inches.	Inches		
U. S. No. 2, f 5.657.....	1	8 $\frac{1}{2}$ x 6 $\frac{1}{2}$	7 $\frac{1}{2}$ x 4 $\frac{1}{2}$	2	8 $\frac{1}{2}$	\$48 60	\$35 80
".....	2	10 x 8	8 $\frac{1}{2}$ x 6 $\frac{1}{2}$	2 $\frac{1}{4}$	10 $\frac{1}{2}$	59 50	65 60
".....	3	12 x 10	10 x 8	2 $\frac{3}{4}$	11 $\frac{1}{2}$	81 00	90 00
".....	4	15 x 12	12 x 10	3 $\frac{1}{4}$	16 $\frac{1}{2}$	107 00	112 80
".....	5	18 x 16	15 x 12	4	20	162 00	176 40
".....	6	22 x 18	18 x 16	5	24	291 60	343 20
".....	7	25 x 21	22 x 18	6	30	385 20	414 00
".....	8	28 x 24	25 x 20	7	36	518 40	568 80

SWIFT & SON'S Portable Photographic Combination Sets & Lenses

Which have been designed with a view of obtaining extreme portability for the use of the amateur and professional photographer on a tour, where Lenses of various focus are likely to be wanted.

These sets are so arranged that from three to four pairs of Lenses of different focusses can be screwed into the one brass jacket supplied with each set. It is fitted with SWIFT & SON'S IMPROVED IRIS DIAPHRAGM.



The box containing the sheaves of the Iris Diaphragm is engraved with the Photographic Society's numbers and exposure ratio.

Each set is packed in a very portable case for the convenience of carrying.

PORTABLE PARAGON LENSES, embracing Angles from 53° to 80°.

- No. 1.—Comprising four pairs of Lenses for pictures, from lantern size to $6\frac{1}{2} \times 4\frac{3}{4}$ of the following focusses, viz.: 3 in. for plates $3\frac{1}{2} \times 3\frac{1}{2}$, 4 in. for plates $4\frac{1}{2} \times 3\frac{1}{2}$, 5 in. for plates 5×4 , and 6 in. for plates $6\frac{1}{2} \times 4\frac{3}{4}$. Price \$84 00
- No. 2.—For negatives from $6\frac{1}{2} \times 4\frac{3}{4}$ to $8\frac{1}{2} \times 6\frac{1}{2}$, fitted with pairs of Lenses of the following focusses, viz.: 6 in. for plates $6\frac{1}{2} \times 4\frac{3}{4}$, 7 in. for plates $7\frac{1}{2} \times 4\frac{3}{4}$ and 8×5 , 8 in. for plates $8\frac{1}{2} \times 6\frac{1}{2}$. Price 97 60
- No. 3.—For negatives from 9×7 to 12×10 , comprising pairs of Lenses of following focusses, viz.: 9 in. for plates 9×7 , 10 in. for plates 10×8 , 12 in. for plates 12×10 . Price 156 00

If any of the above Lenses are stopped down they will cover plates two or three times larger than mentioned in list.

RAPID PARAGONS.

The Best Form of Lens that an Amateur can have for all Out-door Photography

- No. 1.—For negatives from lantern size to 5×4 , comprising pairs of Lenses of the following focusses, viz.: 3 in. for plates $3\frac{1}{2} \times 3\frac{1}{2}$, $4\frac{1}{2}$ in. for plates $4\frac{1}{2} \times 3\frac{1}{2}$, 6 in. for plates 5×4 . Price \$78 15
- No. 2.—For negatives from $6\frac{1}{2} \times 4\frac{3}{4}$ to $8\frac{1}{2} \times 6\frac{1}{2}$, comprising pairs of Lenses from $7\frac{1}{2}$ in. to 11 ins. in focus, viz.: $7\frac{1}{2}$ in. for plates $6\frac{1}{2} \times 4\frac{3}{4}$, and 9 in. for plates $7\frac{1}{2} \times 5$ and 8×5 , 11 in. for plates $8\frac{1}{2} \times 6\frac{1}{2}$. Price 111 75
- No. 3.—For negatives from 9×7 to 12×10 , comprising pairs of Lenses from 12 in. focus to 16 in., viz.: 12 in. for plates 9×7 , 14 in. for plates 10×8 , 16 in. for plates 12×10 . Price 171 50

PORTABLE LONG FOCUS LANDSCAPE LENSES. First Series.

For Photographing Mountainous Scenery or Exceptionally Distant Landscapes.

- No. 1.—For negatives $6\frac{1}{2} \times 4\frac{3}{4}$ to $8\frac{1}{2} \times 6\frac{1}{2}$, comprising pairs of Lenses of the following focusses, viz.: 11 in. for plates $6\frac{1}{2} \times 4\frac{3}{4}$, 14 in. for plates $7\frac{1}{2} \times 5$, 16 in. for plates $8\frac{1}{2} \times 6\frac{1}{2}$. Price \$81 00
- No. 2.—For negatives from $8\frac{1}{2} \times 6\frac{1}{2}$ to 10×8 , comprising pairs of Lenses of the following focusses, viz.: 16 in. $8\frac{1}{2} \times 6\frac{1}{2}$, 18 in. 9×7 , 20 in. 10×8 . Price 104 00

LENSES

Accurately Paired for Stereoscopic Photography.

Single landscape Lenses made with the new Jena flint and crown glass. These Lenses can be strongly recommended for landscapes, pure and simple. The largest aperture is of sufficient intensity to give a fully exposed negative when making instantaneous exposures. Each Lens is adapted to an adjustable mount and fitted with revolving diaphragm of apertures, the largest being U. S. No. 8 or *f.* 11.814.

	Diam. of Lenses. Inches.	Equi focus. Inches.	Price p. pair, with revolving wheel of apertures.	Price with Iris diaphragm.
No. 1	1 $\frac{1}{4}$	3 $\frac{3}{4}$	\$36 00	\$36 75
" 2	1 $\frac{1}{4}$	4	36 00	36 75
" 3	1 $\frac{1}{4}$	4 $\frac{1}{4}$	28 50	29 25
" 4	1 $\frac{1}{4}$	5	31 50	42 15
" 5	1 $\frac{1}{4}$	6	34 00	46 75

PORTABLE PARAGON LENSES,

Accurately Paired.

These Lenses give microscopic definition in landscapes, architecture and interiors (they are not recommended for instantaneous exposures), fitted in a rigid mount with a revolving wheel of apertures, the largest being U. S. No. 8, *f.* 11.814.

	Equi focus. Inches.	Price per pair, with revolving wheel of aperture.	Price with Iris diaphragm.
No. 1a	3	\$39 00	\$49 75
" 2a	4	41 75	52 50
" 3a	5	45 50	56 00
" 4a	6	52 00	62 75

RAPID PARAGONS.

Largest Aperture, U. S. No. 2, *f.* 5-657.

For portraits, groups, instantaneous effects, landscapes, architecture and dimly lighted interiors, fitted in rigid mounts. Nos. 1 and 2, with revolving wheel of apertures, and No. 3, with Waterhouse diaphragms.

	Diam. of Lenses. Inches.	Equi focus. Inches.	Price p. pair, with revolving wheel of apertures.	Price with Iris diaphragm.
No. 1a	$\frac{5}{8}$	3	\$45 50	\$56 25
" 2a	$\frac{3}{4}$	4 $\frac{1}{4}$	52 00	62 75
" 3a	1	6	54 75	68 00

WIDE-ANGLE PARAGON LENSES.

For architecture, etc., in cramped positions, fitted in rigid mount with revolving wheel of apertures, U. S. No. 8, *f.* 11.814.

	Diameter of Lenses. Inches.	Back focus. Inches.	Equi focus. Inches.	Price per pair, with revolving wh'l of apert's.	Price with Iris diaphragm.
No. 1a	$\frac{5}{8}$	2	2 $\frac{1}{4}$	\$52 00	\$62 75
" 2a	$\frac{3}{4}$	2 $\frac{1}{4}$	3	52 00	62 75
3a	7-10	3 $\frac{1}{2}$	4	58 50	69 15

SWIFT & SON'S RAPID CARTE-DE-VISITE LENSES.

Although not so quick as the extra rapid C.-D.-V. Lenses, they will be found to produce very fine pictures, immensely superior to those taken by the ordinary continental Lenses intended for the same purpose. These combinations will be found invaluable for the production of either standing or sitting figures, with full opening of Lens. They are constructed to give as flat a field as is consistent with good definition at the margin of plate, and will give rapid results with brilliancy and exquisite defining power. In cases where the studio exceeds twenty feet in length the No. 3 C.-D.-V. Lens should be used to obtain the best pictures and correct perspective. Where this distance cannot be obtained the No. 2, or even the No. 1, will be found to give excellently defined negatives when a stop is used. Waterhouse Diaphragms supplied with Lenses marked as below:

U. S. Nos.	1	2	4	8	16	32	64
	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>
	4	5.657	8	11.314	16	22.627	32

No. 1.

Diameter of Lens, $1\frac{3}{4}$ inches; focus, $4\frac{1}{4}$ inches; requiring 14 feet between the Lens and the subject. Price \$39 60

No. 2.

Diameter of Lens, 2 1-10 inches; focus, $4\frac{1}{4}$ inches; requiring 16 feet between Lens and subject. Price..... 45 00

No. 3.

Diameter of Lens, $2\frac{1}{4}$ inches; focus, 6 inches; requiring from 18 to 19 feet between Lens and subject. Price..... 73 00

Extra Rapid Carte-de-Visite Lenses.

Specially Computed for Photographing Children.

JAMES SWIFT & SON have devoted a considerable amount of time and expense in perfecting all their Lenses intended for use in the studio by the professional photographer, but more particularly the above C.-D.-V. and their improved Portrait Lenses.

The No. 1 C.-D.-V. Lens covers the quarter-plate sharp to the margin with the full opening; and will permit of a photographer taking pictures on dull days during the winter months, which would be an impossibility with the ordinary Carte Lenses. First-class cabinets can be taken with the No. 2 C.-D.-V. Lenses, if slightly stopped down. To get the best effect the No. 2 Lens should be used where the studio exceeds twenty feet in length. Waterhouse Diaphragms supplied with Lenses marked as below:

U. S. Nos.	.5	.1	2	4	8	16	32
	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>
	2.828	4	5.657	8	11.314	16	22.627

No. 1.

Diameter of Lens, $2\frac{1}{4}$ inches; focus, $4\frac{1}{4}$ inches, with standard diaphragms. Price, \$37 00

No. 2.

Diameter of Lens, $3\frac{1}{4}$ inches; focus, 6 inches, with diaphragms. Price..... 102 00

SCOVILL & ADAMS TIME AND INSTANTANEOUS SHUTTER.

That the substitution of a pneumatic release for the ordinary trigger on a wood drop-shutter greatly enhances its value, "goes without saying."

THE SCOVILL & ADAMS TIME AND INSTANTANEOUS SHUTTER

Is Fitted with Pneumatic Attachment,

which may be worked at a considerable distance from the Camera, thus enabling the operator to form part of a group or to be included in a view he is photographing. This Shutter may be used for either timed or instantaneous exposures; the change is made by simply moving a switch.

Scovill & Adams Universal Safety Shutters.

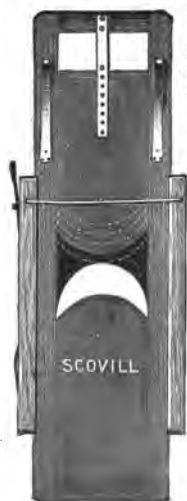
This Shutter is styled Universal, not only because more of the Scovill & Adams Safety Shutters are in use than of any other pattern, but because it can be arranged with a variety of openings, from $\frac{1}{4}$ to 4 inches at the center, as shown by the dotted lines of the accompanying illustration. Uniform distribution of light over the plate is insured by the form of opening.

The brakes on all these Shutters make them safe to use, by preventing a recoil with the resulting double exposure, and the jarring common to many shutters, which in time breaks apart the glasses of a Lens where cemented together—hence the designation "Safety Shutters."

PRICE LIST.

No.	Width of Opening in Slide.	Scovill & Adams Universal Shutters.	Universal Shutters, with Pneumatic Release.	Scovill & Adams Safety Shutters.	Safety Shutters, with Pneumatic Release.	Universal Time and Instantaneous Shutter with Pneumatic Release.
1	1 $\frac{1}{4}$ ins.	\$2.70	\$4.20	\$1.20	\$2.70	\$4.70
2	1 $\frac{1}{2}$ "	2.80	4.30	1.30	2.80	4.80
3	1 $\frac{3}{4}$ "	2.90	4.40	1.40	2.90	4.90
4	2 "	3.00	4.50	1.50	3.00	5.00
5	2 $\frac{1}{2}$ "	3.10	4.60	1.60	3.10	5.10
6	3 "	3.25	4.75	1.75	3.25	5.25

When ordering these Shutters, exact diameter of hood of Lens should be given, so that the proper circular opening may be cut out to exactly fit hood of Lens.



Scovill & Adams Universal Shutter.



Scovill & Adams Safety Shutter, with Time and Instantaneous Attachment.

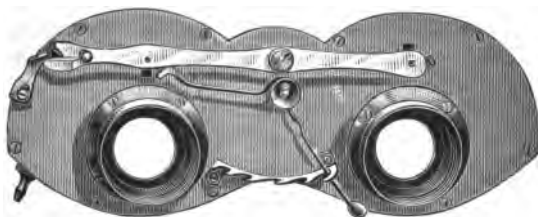


Scovill & Adams Safety Shutter with Pneumatic Release.

PROSCH PHOTOGRAPHIC SHUTTERS.



Triplex.



Duplex Stereoscopic.

TRIPLEX STEREOSCOPIC is identical with DUPLEX STEREOSCOPIC, except release mechanism, as shown in Triplex cut.

GYRUS PROSCH'S SHUTTERS

HAVE AN ESTABLISHED REPUTATION.

The most striking feature of the latest of this series of Shutters, the "Triplex," is in its fewness of parts and simplicity of mechanism, and yet it is capable of successful use on a greater range of work than any known Shutter, and withal it is exceedingly compact. All its mechanism is on the face, as shown in cut, excepting the two exposing slides in interior of casing. The exposing slides, or leaves, do not, as in about all Shutters, move one way to open and reverse to close, but have an uninterrupted pass-by movement. The advantages of this pass-by movement insuring as it does much greater rapidity than is possible with an interrupted movement, and also entire freedom from vibration, is admitted on all sides; but competitors have to make shift with a reversing movement, as efforts to devise a movement on the same principle, but not conflicting with that of the "Triplex," have failed. The exposing slides of a number of this latter class are regulatable to serve as diaphragms also, and the pretense is made that lenses used with them give greater depth and cover better than when used with Shutters, like the Triplex, which employ the ordinary form of diaphragm. The fallacy of this is, however, easily comprehended, when it is noticed that in a movement there is presented a diaphragm changing from small to large, to small again, the average of which is quite small. *It is the small diaphragm, and that only, which produces the effects claimed for the Shutter, and, it should be noted, at a sacrifice of light incident to the use of a small diaphragm.* Owing to the superior light admitting qualities of the Triplex Shutter, the stop required to give desired effects can be used, and a plate exposed by it will, under identical conditions, show more time-light admitted than if exposed with a Shutter of the diaphragming class. Rotary Stops, as fitted to the Triplex Shutter, furnish a convenient substitute for loose stops used with lenses, and in the adaptation there is no sacrifice of simplicity and durability of the Shutter proper. The rotary disk of hard rubber, or brass blackened, has five openings, the largest same as opening in Shutter, the other of such sizes as thought best, but corresponding with stops of lens Shutter is fitted for. Shutters are, if desired, fitted to use ordinary stops.

The Quick Instantaneous of medium size Shutters ranges from $\frac{1}{16}$ to $\frac{1}{100}$ second; the smallest are quicker, the largest slower. A medium between this and Timed exposures is provided by the Slow Instantaneous, which ranges from $\frac{1}{2}$ to $\frac{1}{16}$ second, the quickness being at command of operator at instant of use, the exposure depending *entirely* on quickness

of pressure on air bulb. [Note: Do not confuse this with Slow Instantaneous of other Shutters, which require to be previously set for a certain time, and regardless of need of slower or quicker movement at moment it is used, the time must be that set for.] Timed exposures are also wholly regulated by pressure on air bulb. As long as pressure is held, Shutter remains open, and when relieved, it closes, and is ready for a succeeding exposure. Automatic timing attachments, if reliable, are desirable; but we have yet to see such a contrivance near so reliable, for timing, as the old-fashioned way of counting seconds. Besides their general unreliability, their adaptation to Shutters only complicates them.

POINTS TO HAVE IN MIND WHEN ORDERING.

The Triplex Shutter is fitted close to diaphragm, whether for double or single combination lenses, necessary tubes being fitted to it to exactly correspond to original lens tube, and to which lenses from such tube are transferred. As a makeshift they are sometimes fitted behind or in front of lenses, but so fitted do not operate as well optically, and besides a much larger Shutter is required.

As the opening in Shutter governs its dimensions, weight and cost, and also, as those of small and medium sizes work best, when a shutter of small diaphragm opening will serve, that is best to order.

As a rule, unless specially directed, Shutters are furnished having opening about same as next to largest diaphragm. Having gauges of lens and flange threads, and measurements of most lenses much in use, also of diaphragms, we are able to furnish Shutters, correctly fitted, without customer having to forward his lens; still, while we seldom miss an accurate fit, unless either complete lens, or at least lens tube is sent, no responsibility as to proper fit is assumed. Even when it is believed we have necessary gauges, etc., when inquiring or sending order, it is best to give as much information as possible, as a saving of a few words in a correspondence often necessitates further inquiry. Give name of lens and back forms, and having unscrewed lenses, give inside diameter of tube, its full length, also from front end to diaphragm, and if thread, which screws into flange, is on lens tube; instead of on back lens mount, so state, and give inside diameter of flange. It is also desirable to give number of threads to inch, of lens and flange screws. Also give diameters of diaphragms, and an outline of one. The frequent changes made in some lenses make this information quite a necessity.

LIST OF SIZES AND PRICES WITH ROTARY STOPS.

Size.....	00	0	0A	1	1A	2	2A	3	3A	4	5
Aperture.....	$\frac{1}{4}$	$\frac{1}{2}$	1	1 $\frac{1}{4}$	1 $\frac{1}{2}$	1 $\frac{3}{4}$	2	2 $\frac{1}{4}$	2 $\frac{1}{2}$	3	3 $\frac{1}{2}$
Price.....	\$12.50	13.00	13.50	14.00	15.00	15.50	16.00	16.00	18.00	20.00	22.00

Up to and including size 2A are fitted with rotary stops. Fitted for use of ordinary stops (same as are sizes above 2A), \$1.00 less. When

flange screw is on body of tube, 50 cents extra: but larger than size 8, 75 cents.

Shutters are frequently fitted, by adapting collars, for use with more than one lens; and besides the convenience of making one shutter serve for several lenses, very satisfactory combinations, giving different focal lengths, can often be made by use of a part of two different combinations. The cost of such fitting varies, but ordinarily fitting two lenses costs price and one-third.

Triplex Detective Shutters are adaptable to styles of detective boxes. They are fitted with push release to work from bottom or side of box, in addition to the pneumatic release. All adjusting is done from outside, except changing from instantaneous to time. In compact boxes the ordinary spring is used, but in roomy boxes a more powerful one, and applied differently, is employed, which works as quick as $\frac{1}{100}$ of second. To fit this shutter we require both lens and box. Fitting to box and rotary stops are included in price. Prices: Sizes, either No. 0 or 00, \$15.00; No. 0A or 1, \$16.00.

Triplex Stereoscopic Shutters consist of two Shutters on one frame, moved in unison by one lever and operated by one release, and consequently give two identical exposures. If the perfectness and convenience of this Shutter were only as well known as that of the regular Shutter, there would be many more than there are now in making this beautiful style of work. Made in two sizes, corresponding to No. 00 and 0 of regular Shutter. The lenses are placed $8\frac{1}{4}$ inches from centers; any separation deviating from this costs \$1.00 more. Rotary stops are included. Prices: Size No. 00, \$20.00; No. 0, \$21.00; flange collars, when required, 75 cents the pair.

The manufacture of the well-known "Duplex Shutter" is continued, although about every one acquainted with the respective merits of the "Triplex" and the "Duplex" prefer the Triplex on account of its greater simplicity; there are some so much taken with the time feature of the Duplex, requiring one pulsation of bulb to open it, and remaining open until a second pulsation is given, as to make them desire it. For wide angle lenses requiring lengthy exposures, it has a decided advantage. The Duplex with silent time and slow instantaneous attachment (similar to Triplex), has four methods of exposure. Prices with rotary stops are the same as for the Triplex. Silent time slow instantaneous, extra.

Both the Triplex and the Duplex Shutters are the quickest Shutters made, working both time and instantaneous, and as quick as any purely instantaneous shutters.

For exceptionally quick work, we furnish the "Prosch Rapid Shutter," which is for quick, instantaneous work only. Its movements range from $\frac{1}{100}$ to $\frac{1}{1000}$ of second. Most successful results have been obtained with it; of race-track and athletic work. Made in two sizes: No. 1, 1-inch opening, \$18.00; No. 2, $1\frac{1}{2}$ -inch, \$22.00. It is placed at the diaphragm.

SCOVILL MAGIC FINDERS,

(PATENTED.)

Unequaled for Landscape Photography.



ORDINARY FINDERS are quite unsatisfactory, on account of the reversed image which they reflect. While, with the camera this reversal may be regarded as unavoidable, it is certainly a very undesirable feature in the finder, for it greatly interferes with the judgment of the operator as to the best arrangement of the desired picture.

The ideal finder is the one, having two negative lenses of rectangular form, mounted close together in a nickel-plated frame, on the bottom of which is a sliding piece, by which the finder can easily be attached to the camera.

Looking through the finder from the *proper distance, toward the view to be taken, the operator sees before him a correct, right side up, and delightfully brilliant and sharp miniature picture of the view before him, the little frame taking in the full picture projected by means of an instantaneous lens on the ground-glass of his camera. Two circles, marked in the exact centres of the front and back surfaces of the combination, serve to enable the operator to bring any certain part of the view to the exact centre of the picture by placing the eye so that the two circles cover each other, and at the same time adjusting the camera so that the selected part of the view appears inside the circles.*

The Scovill Magic Finders are light, ornamental, easily adjusted and detached, and are now considered indispensable by successful view takers.

No. 1, for 4 x 5 Camera,	-	-	-	\$1 50
" 2, " 5 x 8 "	-	-	-	1 75
" 3, " 6½ x 8½ "	-	-	-	2 00
" 4, " 8 x 10 "	-	-	-	2 50

C. C. H. FOCUSING GLASS.

This is a desirable little instrument for aiding the operator in getting a sharp focus.

C. C. H. FOCUSING GLASS.....	\$4 00
Darlot Focusing Glass	2 50
Scovill's Focusing Glass, each.....	75

C. C. H. Glass.

Save your eyes by using one of these instruments.

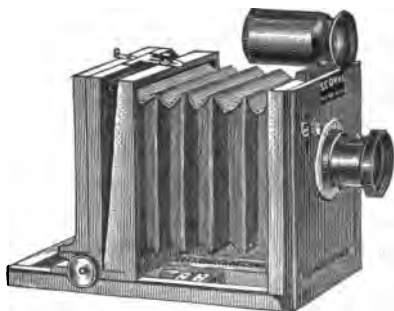


WATERBURY FOCUSING GLASS.



Waterbury Focusing Glass, Rubber.....each, \$0 50

PEERLESS VIEW FINDER, Each, \$1.50.



THE
"WATERBURY FINDER,"

Each \$3.00.

To Attach to Camera
FOR
Instantaneous Work.

THE SCOVILL MAGNESIUM * COMPOUND

WITH SILVER PAPER LABEL,
IS ENTIRELY FREE FROM POISONOUS INGREDIENTS.

IN ORDER TO DEMONSTRATE THIS, QUANTITIES HAVE
BEEN EATEN AT VARIOUS TIMES.

*It has often been pounded in a mortar to show that
it does not explode.*

The Results Obtained by Using Our Magnesium
Compound have Never been Surpassed.

"It seems almost incredible that any one should continue to use compounds which are known to be of an explosive nature. The various substances used to make actinic Magnesium light are no secrets; some are easily explosive, some are dangerously poisonous, and yet, for some fancied advantages which they offer in a compound, manufacturers are willing to put them upon a confiding public, and photographers seem ready to risk their lives, or at least the danger of severely injuring themselves by using them. Even when great caution is used, an explosive compound is always dangerous, and had better be left untouched. If there were no good compounds which were free from dangerous properties, there might be some excuse for adhering to the use of those which are known to be explosive and poisonous, but such is not the case."—*Photographic Times*.

Price of Scovill Magnesium Compound :

In-ounce bottles, with fuses.....	\$0 50
" 1/4 pound cans "	1 40
" 1/2 " " "	2 65
" 1 " " "	5 00
Pure Powdered Magnesium.....	per oz, 50
"	" lb, 6 00

MAGNESIUM FLASH-LIGHT PHOTOGRAPHS.

HOW + OBTAINED

SINCE the introduction of the SCOVILL MAGNESIUM CARTRIDGES, photographs are made instantaneously, which could not otherwise be secured without great expense, trouble, and danger, in caves, tunnels, mines, and other places where daylight does not penetrate.

These are now made in the evening, with the valued surroundings, under the happiest auspices which but a short time ago the most skilled photographer would not have thought it possible to secure. Among other occasions where this can be used to advantage are: Family Groups, Dinner, Private, Theatrical and Fancy Dress Parties, Club and College Dinners, Companies, Weddings, Church Fairs, Picnic Parties, Lodge Meetings, etc. The novelty for the public, and consequent advertisement of this method of Photography, will be at once apparent to the intelligent and progressive photographer, aside from the fact that there are many special occasions constantly presenting themselves, where a picture made in the ordinary way could not be obtained, owing to the impossibility of securing proper light.



The SCOVILL MAGNESIUM CARTRIDGES unite the very excellent quality of extremely actinic light, with convenience of ignition and perfect safety as to its non-explosive nature, and absence of poisonous or other objectionable elements. The compound is prepared in different quantities and put up in boxes, so that the light may always be at hand in convenient shape for using. The cap, too, which fits neatly over the cartridge, protects it from dampness, so that the light may be employed out-of-doors on a damp day, or even during a gentle rain. A fuse is inserted at the bottom of the cartridge, so that there is no danger of a premature explosion with a consequent burning of the hand, as is often done when a charge of the powder is ignited by a match or short taper. The combustion is instantaneous, with no detonation, and there follows no poisonous or otherwise obnoxious gases or vapors from the burning. Out-of-doors with the cap on, the combustion is quite as instantaneous, and the light nearly equal in its intensity.

6th.—It combines with the foregoing unrivaled qualities, the advantages arising from the highest and best qualities of actinic light, absolutely instantaneous combustion, and freedom from disagreeable and dangerous gases and fumes.



DEVELOP the negative in the same way that any instantaneously exposed plate is treated.

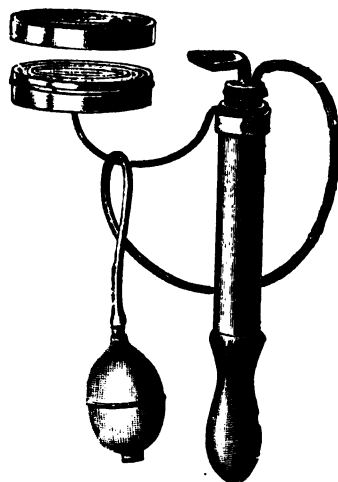
IN SILVER PAPER WRAPPERS.

No.	Size	in packages of six	Per Pkg.	Per Gro.
1.	SMALL	Size	\$0 25	\$6 00
2.	MEDIUM	"	40	9 00
2½	LARGE	"	60	18 00
3.	EXTRA LARGE	"	75	17 00

These cartridges cannot be sent by mail.

THE LITTLE GIANT REPEATING FLASH LAMP.

Patented September 2, 1890.



SAFE, CONVENIENT AND POWERFUL.

Embodying the same principle as the Standard lamp, and producing a number of intensely brilliant flashes from one charge.

Price, Boxed, \$2.50.

THE STANDARD TRIPLE FLASH LAMP.

PATENTED.



This lamp gives a continuous or intermitting light of intense power and brilliancy, and is for lighting theatres or large halls.

Price \$7.50.

THE STANDARD FLASH LAMP.

PATENTED.



This lamp gives a continuous or intermitting flash, and having an Argand flame box insures the complete consumption of powder with minimum smoke. It is for amateur or professional use.

Two or more of these lamps can be flashed instantaneously from different points.

Price, \$4.50.



The "Safety" Flash Igniter.

(PATENTED.)

This Igniter can be used for either compound Flash Powders, Magnesium Cartridges or pure Magnesium Powder on substratum of Flash Cotton.

Particularly recommended for the Compound Flash Powders on account of its safety. It uses no alcohol or other flame. Ignition is produced by the glowing point of a carbon arranged under a receptacle for the Fuse and Flash Powder. The carbon is brought into contact with the fuse by compressing the rubber bulb. The flash can be controlled by the operator from his camera, and at any distance, as the Igniter works equally well with long or short tubing. Directions for use in every box.

Price, including box of carbons, rubber bulb, and 8 feet of rubber tubing. Complete in wooden box.....	\$4 00
Extra boxes of prepared carbons.....	25
Extra rubber tubing in lengths of 12 feet, including brass connection.....	75

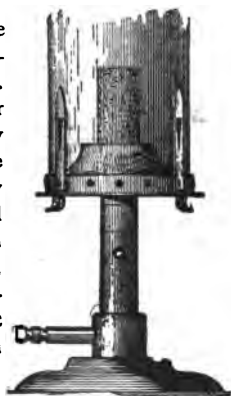
THE "ALADDIN" DARK-ROOM LAMP.

(PATENTED.)



**ALADDIN.
Bracket Lamp.**

For use with gas. Burning the patent Sodium Wick, which produces a non-actinic chemical flame. It gives a beautiful yellow light for dark-room use which is perfectly safe, without smoke or odor; more brilliant than the ordinary ruby light, and both pleasant and restful to the eyes. The lamp is made in two styles: the BRACKET LAMP, which may be slipped over any ordinary gas burner, and the TABLE LAMP, for which the gas connection is made by rubber tubing.



**ALADDIN.
Table Lamp.**

Price, including non-actinic amber chimney, extra brass tip, and box of chemical wicks, in wooden box, complete.	\$3 50
Extra chemical wicks, sufficient for one thousand hours' lighting, per box	85
Extra non-actinic amber chimneys, each.....	80

In ordering please specify whether BRACKET or TABLE LAMP is desired.

THE PROSCH STORAGE FLASH LAMP.

IS safe to use; entirely reliable in operation; gives a larger, more intense, and decidedly more *effective* illuminating flame, with less consumption of powder, than any flash light device in the market, and besides leaves less smoke, smell and dirt. It is $4\frac{1}{2} \times 3$ inches in size, but in execution it is a giant, one lamp lighting largest home rooms, while two to four are sufficient for ordinary public halls, church and theatre interiors, etc.



PATENT APPLIED FOR.

The cylindrical storage chamber holds about 100 grains of pure magnesium

powder. A $\frac{1}{8}$ rubber tube having a mouth-piece is attached to nozzle of lamp; and when blown into undermines (as by a jet) the powder, and drives it up through fan-shaped projector tube into the alcohol combustion flame, producing a broad *vertical sheet flame*, which presents to the object to be lighted an illuminating surface of nearly 100 square inches.

The full charge of powder may be consumed in one prolonged flash of several seconds, or repeated short flashes may be made. The powder feeds *entirely automatically and surely*, and the projector tube is so constructed that the powder does not clog in it, and thus a flame unbroken and undiminished in size can be depended on from beginning to end.

A handle can be inserted either side of tube nozzle, and lamp held in the hand, or it can be secured to a stand-rod by binding-screw on side. A reflector is attachable over nozzle, and secured by binding-nut shown.

MADE OF BRASS AND NICKEL-PLATED.....	\$5 00
EXTRA TUBE (5 FEET FURNISHED) PER FOOT.....	06
STORAGE CHAMBER EXTENSIONS (DOUBLING CAPACITY).....	25
CONNECTORS FOR TWO LAMPS, 60c. ; FOUR LAMPS.....	1 00

THE SCOVILL DOUBLE LEVEL.

The Scovill Double Level will be appreciated by landscape and tourist photographers. It is quite compact and may be attached to the body

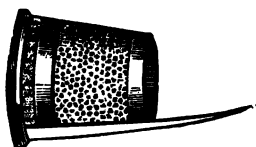


of hand cameras, but if a Tripod Camera is used it should be attached to the swing-back, and may be used with cameras of all sizes. Price 40 cents.

By using the **Russell Negative Clasp** and **Drying Support**, there is no need of wetting or staining the fingers in the developer, or of touching a plate until after it has been developed, varnished and dried. Adaptable for all sizes, from $3\frac{1}{4} \times 4\frac{1}{4}$ to 8×10 inclusive. Price, 15c. each.



SCOVILL'S EFFICIENT PLATE LIFTER.



This Plate Lifter is very nearly like an ordinary open end **Thimble** with a **Pointed piece of Metal** soldered securely to it as shown in the illustration.

Where a number of plates are developed in one dish, this Plate Lifter is not only a convenience, but quite a necessity.

Price, 15 cents each.

The SCOVILL PEERLESS DARK-ROOM LANTERN.



"This is without question the best Lantern for the photographer's use yet introduced." Such is the report of experts who have had them in use for months.

Why they were agreed in their conclusions:

Because the ventilation is perfect, and danger of overheating overcome.

Because it is constructed so that white light does not escape.

Because it gives ample light for the dark-room.

Because the abundant light does not fog, but does show any spot or blemish in the plate.

Because so much of the light may be thrown into the developing dish and be shaded from the eyes.

Because it may be used either with coal-oil or candle.

Because the flame may be so quickly controlled by unlatching the door or uncatching the bottom of the Lantern.

Price, \$2.50.



The W. I. A. Petite Dry-Plate Lantern

Will be found quite superior to any lantern previously offered at a smaller price than the Scovill Peerless Lantern. It is much to be preferred above an oil consumer, on account of safety and cleanliness. The light emitted is abundant, and the ventilation perfect. When not in use the chimney of this petite lantern may be taken off and placed inside over the candle.

Price, \$1.25.

No. 1	S. P.	C. Wax Candle for the W. I. A. Petite Dry-Plate Lantern, each,	\$0.10
No. 2	do.	do.	per dozen, with Glass Cup, 75

CARBUTT'S

MULTUM IN PARVO

DRY PLATE LANTERN.



Lantern arranged for developing, and after fixing examining negatives by opal light.

Has three separate and distinct forms of light, and can be used for seven or more different operations in photography. It is adapted for the use of either oil or gas ; is provided with coal-oil lamp, with improved patent burner and silvered reflector ; is about nine inches square by fourteen inches high, with eight by ten light of deep ruby glass in front, and hood for protecting the eyes from the glare of the red light.

PRICE \$6.00, BOXED READY FOR SHIPMENT.

PRICE LIST
—OF—
PHOTOGRAPH CARDS
FOR MOUNTING VIEWS.

Plain Cards, White or Gray.

Per Package of 25.

No. 2.	9 x 11.....	\$0 45
" 2.	6½ x 8½.....	80

Plain Cards, with Square Gilt Line.

Per Package of 25.

No. 2.	10 x 12, White or Gray, 6 x 8 Opening.....	\$1 00
" 2.	9 x 11, " " 5 x 8 ".....	80
" 2.	6½ x 8½, " " 4 x 6 ".....	60

UNENAMELED CARDS, ROUND CORNERS.

No. 9, White, Primrose, Gray or Rose.

Per Package of 25.

Boudoir (or 5 x 8), 5½ x 8½.....	\$0 38
4½ x 5½.....	25
5 x 7.....	35
8½ x 4½.....	15

ENAMELED CARDS, ROUND CORNERS.

No. 9, Black, Chocolate or Maroon-Gray.

Per Package of 25.

Boudoir (or 5 x 8), 5½ x 8½.....	\$0 55
4½ x 5½.....	30
5 x 7.....	45
8½ x 4½.....	20

UNENAMELED GOLD BEVELED EDGE CARDS, ROUND CORNERS.

No. 26, White, Primrose, Gray or Rose.

Per Package of 25.

Cabinet size, 4½ x 6½.....	\$0 85
Boudoir " 5½ x 8½.....	70
4½ x 5½.....	40
5 x 7.....	60
8½ x 4½.....	32

ENAMELED GOLD BEVELED EDGE CARDS, ROUND CORNERS.

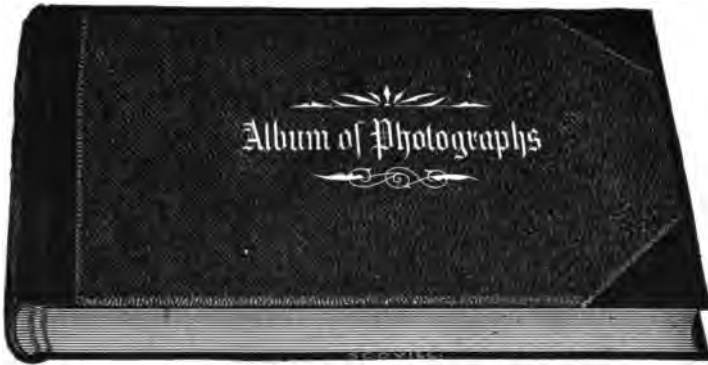
No. 67, Maroon-Gray, and

" 26, Black, Chocolate, Dark Olive or Bottle Green.

Per Package of 25.

Cabinet size, 4½ x 6½.....	\$0 45
Boudoir " 5½ x 8½.....	80
4½ x 5½.....	45
5 x 7.....	70
8½ x 4½.....	35

Scovill Albums & Photographs.



How often the Amateur Photographer is heard to remark, that as fast as he makes prints from a negative his friends get away with them, and none are left to be treasured up as evidences of his advancement in the art. In order to keep at least one picture from each negative, and to arrange the collection in the best manner for display and preservation, tasteful albums have been introduced by the Scovill & Adams Co.

Each Album has 48 pages, 24 leaves. In them the finest card-board only is used, chemically free from anything that could injure a print.

PRICES:

Size of Card	6x7	7x10	10x12	11x14	14x17
For Photo. (size)	4x5	5x8	6½x8½	8x10	11x14
Plain	\$1.25	1.50	2.25	2.50	5.00
With Gilt Lines.....	1.25	....	....	....	....

PORTE-FEUILLE.

The cards for these Albums may be quickly and securely attached to the guards after the prints are mounted and burnished.

Price, Including 25 Sheets of Collins' Best Quality White Cards.

No. 2, 10x12 for 6½x 8½ Photographs.....	\$2 00
" 3, 11x14 for 8 x10 "	2 25

Price, Including 25 Sheets of Collins' White Muslin-Back Cards.

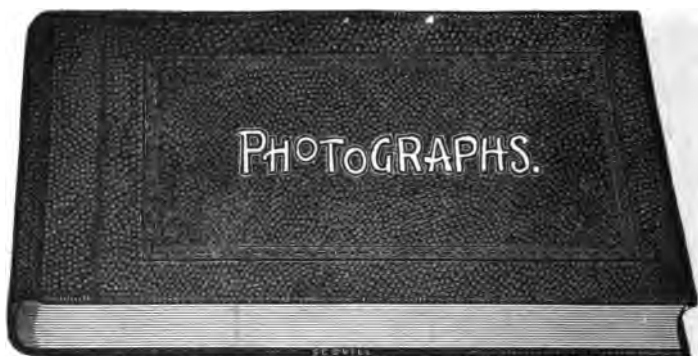
No. 5, 10x12 for 6½x 8½ Photographs.....	\$2 00
" 6, 11x14 for 8 x10 "	2 25

Howard : Albums

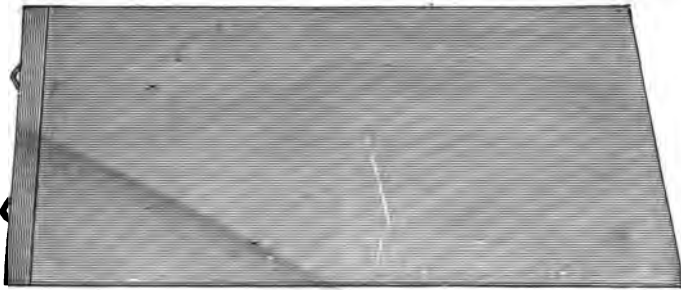
WITH INTERCHANGEABLE LEAVES.



THE Howard Album, with interchangeable cards, is the latest novelty in the way of an album for mounting photographs. In handsomely embossed covers, are bound 25 of Collins' cards, which are chemically pure from all matter that would injure the photographs. In the mode of binding, and their interchangeable feature, lies the difference between this and other albums.



To each card are attached two small metallic binding loops, so fastened that they act like hinges ; through the projection of these loops a binding cord passes, which fastens at the back with a tie ; thus each card is bound in the cover independently, and may be taken out and returned or replaced with ease. This method of making an album affords the amateur the best means of preserving the results of his labor, because each picture may be finished before putting the card in the album. The arrangement of the pictures may also be altered at will—if a single card is spoiled the whole album is not ruined. If a picture is taken out, it can be quickly and readily done without injury to the volume.



HOWARD ALBUMS.

Full Cloth, Embossed, Gold Label, with A. M. Collins
Mfg. Co.'s No. 1 Cards.

				With 25 Collins Cards.
No. 1.	—	6x 7 Cards, for 4 x 5 Photographs,	.....	\$1 25
" 2.	—	7x10 " " 5 x 8	.....	1 50
" 2½.	—	8x10 " " 6½x 8½	.....	2 00
" 3.	—	10x12 " " 6½x 8½	.....	2 25
" 4.	—	11x14 " " 8 x10	.....	2 50

HOWARD ALBUMS.

Morocco, Half Leather, Extra Gold Finish, with A. M.
Collins Mfg. Co.'s Cards, Boxed.

				With 25 Collins Cards.	With 50 Collins Cards.
No. 5.	—	7x10 Cards, for 5 x8 Photographs	\$2 00	No. 11.	— \$3 50
" 6.	—	8x10 " " 6½x8½	2 50	" 12.	— 4 00
" 7.	—	10x12 " " 6½x8½	3 00	" 13.	— 4 75
" 8.	—	11x14 " " 8x10	3 50	" 14.	— 5 50
" 9.	—	14x17 " " 10x12 or 11x14	5 50	" 15.	— 9 00
" 10.	—	16x20 " " 11x14 " 14x17	7 25	" 16.	— 11 00

Extra Cards Collins' Best for Howard Albums, Mounted with Loops,
Ready for Use.

6x 7, Package of one dozen.....	\$0 38
7x10, " " "	50
8x10, " " "	60
10x12, " " "	75
11x14, " " "	88
14x17, " " "	1 25
16x20, " " "	1 55

THE ECLIPSE ALBUMS.

Interchangeable Leaves. Spring Back.



THE ECLIPSE ALBUM is the most perfect album manufactured. **The interchangeable feature is superior to all others.** It contains twenty-four Collins' Best Cards, which are chemically pure and free from all matter that would injure a photograph. Each leaf is **distinctly independent**, and may be taken out and returned or replaced with the utmost ease without having to disturb any other leaf or part of the album. The arrangement of the picture may be altered when desired, and **if a single leaf is spoiled the whole album is not ruined.**

Directions for Removing the Leaves and Mounting Photographs.

READ CAREFULLY THE FOLLOWING.

The leaves of the Eclipse Album are fastened by means of a small rod or "pintle," as will be seen by the above cut. At the back of the album, in the inside, is a slot or cut expressly made, by means of which you can readily grip and remove the pintle. The pintle thus removed will give you an instrument with which you can remove the others. A pin or hairpin also answers admirably.

Place the flat or upper end against the flat end in the leaf, and press it out, thereby removing both the leaf and the pintle.

Each picture may then be finished and mounted on the card and **burnished** before putting the card in the album.

Photographs should under no circumstances be mounted with the ordinary photographer's paste or the many scented "paste preparations" sold by dealers generally.

We confidently recommend "**Non-Cockle**" as being the best preparation manufactured for mounting purposes.

In mounting the pictures it is **very important** to have them **dry thoroughly between blotting paper, under pressure.**

The Eclipse Album, as a **sample book**, especially for mounting samples of fine stationery, satins, delicate laces, etc., is pronounced by the best judges as having no equal.

PRICE.

IMPROVED SPRING BACK WITH TWENTY-FOUR COLLINS' CARDS.

No. 1	..... 6 x 7	..... \$2 25	No. 8 1/2	..... 12 x 10	—upright. \$4 25
" 2	..... 7 x 10	..... 2 50	" 4	..... 11 x 14	..... 4 25
" 2 1/2	..... 10 x 7 1/4—upright.	3 50	" 4 1/2	..... 14 x 11 1/4—upright.	6 25
" 3	..... 10 x 12	..... 3 75	" 5	..... 14 x 17	..... 7 00

The Eclipse Albums are handsomely finished in **Morocco**, half **leather bound**, with gilt title, and enclosed in a neat box.

Nos. 2 1/2, 3 1/2, 4 1/2 and 5 have round corners; Nos. 4 1/2 and 5 are extra gold finish.

FULL LEATHER BOUND.

These books are **full leather bound**, seal grain, padded covers, and round corners. They are expressly made for fine trade. Price as follows:

No. 21	..... 6 x 7	..... \$3 00	No. 23 1/2	..... 12 x 10	—upright. \$6 00
" 22	..... 7 x 10	..... 3 50	" 24	..... 11 x 14	..... 6 00
" 22 1/2	..... 10 x 7 1/4—upright.	4 50	" 24 1/2	..... 14 x 11 1/4—upright.	8 00
" 23	..... 10 x 12	..... 5 50	" 25	..... 14 x 17	..... 9 00

PRICE OF EXTRA LEAVES.

WHITE AND GRAY.			BEST QUALITY.		1 DOZEN IN A BOX	
No. 1	6 x 7	\$0 50	No. 8½	10 x 12	\$0 80	
" 2	7 x 10	65	" 4	11 x 14	1 10	
" 2½	10 x 12	80	" 4½	14 x 17	1 75	
" 3	10 x 12	80	" 5	14 x 17	1 75	

S. P. C.

Ready Sensitized ALBUMEN PAPER.

This paper was expressly manufactured for and introduced by us to give to those who have not the skill, time, inclination or appliances to sensitize photographic paper preparatory to printing, an article of the finest quality and of uniform sensitiveness.

Size.					Per Package.
3½ x 4½	inches,	in light-tight	packages,	2 dozen.....	\$0 24
4 x 5	"	"	"	2 "	31
4½ x 6½	"	"	"	2 "	40
5 x 7	"	"	"	2 "	60
5 x 8	"	"	"	2 "	65
6½ x 8½	"	"	"	2 "	80
8 x 10	"	"	"	2 "	1 20
18 x 22	"	"	"	1 " ..per doz.	3 00

TO SAVE LOSS, PARCELS ARE NOT BROKEN.

THE NEW BLUE PRINT PAPER,

French Satin Junior,

Has the unusual quality of extracting all there is in your negative. By a peculiar feature of its manufacture, it possesses qualities entirely new to Blue Print Papers, and gives prints equal in richness and depth to silver prints.

$3\frac{1}{2}$ x $4\frac{1}{2}$,	per package of 25 sheets.....	\$0 16
4 x 5,	" " " "	20
$4\frac{1}{2}$ x $6\frac{1}{2}$,	" " " "	30
5 x 7,	" " " "	35
5 x 8,	" " " "	40
$6\frac{1}{2}$ x $8\frac{1}{2}$,	" " " "	56
8 x 10,	" " " "	68

This paper keeps perfectly fresh for months, and is worked the same as ordinary Blue Print Paper.

DONALDSON STAR BROMIDE PAPER.

This is the most rapid Bromide made. It does not Blister.

No. "1," Smooth surface, thin, for proofs, positive printing, copying drawings, etc., by contact.

No. "2," Smooth surface, heavy, for positive printing, enlarging, and working in ink, oil and water colors.

No. "3," Rough surface, heavy, for positive printing, enlarging, and working in crayon, ink, water colors and oils.

We recommend the No. "3" for enlargement, and Nos. "1" and "2" smooth surface paper for contact prints. Enlargements on our paper require no finishing when taken from good original negatives.

— PRICE LIST —

OF

STAR BROMIDE PAPERS, Nos. "1," "2," or "3."

CUT SHEETS.

Size.	Per Doz.	Size.	Per Doz.	Size.	Per Doz.
3 1/4 x 4 1/4	\$0 22	6 x 8	\$0 90	17 x 20	\$5 75
4 x 5	36	6 1/2 x 8 1/2	1 00	18 x 22	6 75
4 1/4 x 5 1/4	45	8 x 10	1 35	20 x 24	8 10
4 1/4 x 6 1/4	50	10 x 12	2 05	22 x 27	10 25
4 3/4 x 6 3/4	54	11 x 14	2 70	24 x 30	11 70
5 x 7	60	12 x 15	2 95	25 x 30	12 60
5 x 7 1/2	63	14 x 17	4 10	24 x 36	14 40
5 x 8	68	16 x 20	5 40	30 x 40	20 25

Other sizes in proportion.

If ordered in packages of less than one dozen, 25c. extra will be charged for packing.

IN ROLLS.

10 in. wide, p. yd.. \$0 52	16 in. wide, p. yd.. \$0 81	24 in. wide, p. yd.. \$1 22
11 " " " " 62	18 " " " " 0 90	25 " " " " 1 26
12 " " " " 66	20 " " " " 1 00	30 " " " " 1 52
14 " " " " 72	22 " " " " 1 10	

PERFECTED BRADFISCH



ARISTOTYPE PAPER.

A PERFECT SUBSTITUTE FOR ALBUMEN PAPER.

This paper prints with negatives of **ordinary** density, and gives **rich** and **brilliant** results, with clear and prominent whites.

It does **not** stick, nor does the surface of the print rub off.

THE **PERFECTED BRADFISCH**
TONING AND FIXING
SOLUTION.

is recommended for
for use with Aristotype Paper.

It works perfectly
and is always clear.

N. Y. ARISTOTYPE PAPER.

N. Y. Aristotype Paper, on account of its ease of manipulation, the even and beautiful tones acquired, the high finish and permanent prints obtained, proclaim it

The Perfection of Photographic Printing Papers.

No Fuming, Silvering, Special Solutions, Complicated Operations or Demonstrator required.

IT IS THE BEST AND CHEAPEST.

CAN BE BURNISHED OR SQUEEGEED.

PRICES.

			In Gross Boxes.
Cabinet Trimmed ($3\frac{3}{8} \times 5\frac{1}{2}$).....			\$1 70
Cabinet Untrimmed (4×6).....			1 80
$3\frac{1}{4} \times 4\frac{1}{4}$	\$0 15	Per Doz.....	1 50
4×5	20	" ".....	2 00
$4\frac{1}{4} \times 6\frac{1}{2}$	30	" ".....	3 00
5×7	38	" ".....	3 50
5×8	35	" ".....	4 00
$6\frac{1}{2} \times 8\frac{1}{2}$	60	" ".....	6 00
8×10	70	" ".....	8 00
20×24	4 00	" ".....	48 00
Seconds (cabinet trimmed and 4×5 only).....			1 00

N. Y. Toning and Fixing Solution, 8 ounce bottle, 40 cents; 16 ounce bottle, 75 cents.

N. Y. Matt-Surface Printing-Out Paper is specially adapted for views and large work. **TRY IT.**

Look out for a big red N. Y. on every package.

REDUCTION IN PRICES.



PRICES:

Size.	Per Doz.	Per Gross.	Size.	Per Doz.	Per Gross.
3 1/4 x 4 1/4	\$0 15	\$1 50	5 x 7	\$0 35	\$3 50
4 x 5	20	1 75	5 x 8	40	4 00
3 3/8 x 5 1/2	20	1 75	6 1/2 x 8 1/2	60	6 00
4 1/4 x 5 1/2	20	1 75	8 x 10	75	7 50
4 x 6	25	1 85	20 x 24	4 00	...
4 1/4 x 6 1/2	80	3 00	Carre.....		75
3 3/8 x 5 1/2		1 75	3 3/8 x 5 1/2 seconds.....		1 00
C. D. V		75			

OMEGA TONING SOLUTION,

FOR TONING OMEGA, ARISTO AND ALBUMEN PAPER.

GIVES ANY TONE AND CLEAR PRINTS.

10-oz. bottle, 30c. 16-oz. bottle, 50c.

The manufacturers of this popular brand of Sensitized Paper, being the oldest in the market, intend to keep their product at reasonable prices and of the best quality.

IT IS liked by the Professional and Amateur because of its ease of manipulation, surety of results and great brilliancy.

FULL DIRECTIONS WITH EACH PACKAGE.

A TRIAL EXPLAINS EVERYTHING.

EASTMAN EUREKA BROMIDE PAPER.

No. 1, 2 or 3.—CUT SHEETS.

Size.	Price.	Size.	Price.	Size.	Price.
3¼ x 4¼	- - \$0 12	5 x 8	- - \$0 34	14 x 17	- - \$2 05
4 x 5	- - 20	6½ x 8½	- - 60	16 x 20	- - 2 70
4¼ x 5½	- - 22	8 x 10	- - 68	17 x 20	- - 2 90
4½ x 6½	- - 23	10 x 12	- - 1 00	18 x 22	- - 3 38
4¾ x 6¾	- - 25	10 x 14	- - 1 20	20 x 24	- - 4 13
5 x 7	- - 30	11 x 14	- - 1 35	22 x 28	- - 5 45
5 x 7½	- - 32	12 x 15	- - 1 50	25 x 30	- - 6 13

Made in Three Grades: No. 1, Thin Smooth. No. 2, Heavy Smooth. No. 3, Heavy Rough.

OTHER SIZES IN PROPORTION.

If ordered in packages of less than one dozen, an extra charge of 25 cents will be made for packing.

IN ROLLS OR ON PATENT SPOOLS FOR ENLARGING EASELS.

10 inches wide,	- \$0 25 per yard.	18 inches wide,	- \$0 45 per yard.
11 "	- 28 "	20 "	- 50 "
12 "	- 30 "	22 "	- 56 "
14 "	- 35 "	24 "	- 61 "
16 "	- 40 "		

NOT LESS THAN TEN YARDS ON A SPOOL.

REDUCED PRICE LIST.

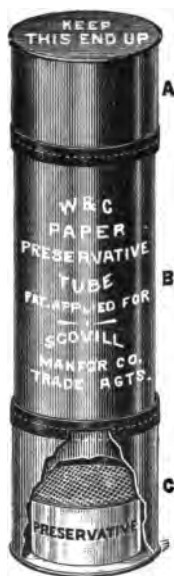
W. & C.

PERFECT PRESERVING TUBES.

FOR SENSITIZED PHOTOGRAPHIC PAPERS.

(PATENT APPLIED FOR.)

COMPACT, RELIABLE, AIR-TIGHT.



No. 1.	Holds 4	x 5	to 4 1/4 x 6 1/2	(Preservative extra)	\$0 90
" 2	"	5	x 7 to 5 x 8	" "	1 10
" 3	"	6 1/2	x 8 1/2 to 8 x 10	" "	1 50
" 4	"	18	x 22	" "	2 00
" 5	"	18	x 22 Gallery use	" "	3 00

— THE —

W. & C. Perfect Paper Preservative

Will keep Sensitized Paper **FRESH** and **BRILLIANT** FOR MONTHS.

EIGHT YEARS in constant use in Europe. Paper can be silvered on dull, cloudy days, and used whenever needed. Proof Paper always fresh and ready for use.

PRICE OF PERFECT PRESERVATIVE.

Tin box, size for Nos. 1, 2, and 3 Tubes. each, \$0 20
 Tin box, " 4 and 5 " " 0 35

SCOVILL PRINT ROLLER AND SQUEEGEE.



Superior to anything in the Market.

The Scovill Print Roller and Squeegee is especially designed to be used in the place of the ordinary Squeegee in working film and paper negatives, bromide prints for removing surplus water from albumen prints before mounting, etc.

It is neatly constructed with black walnut handle, brass trimmings and a heavily covered rubber roller.

It will be found a very handy tool alike to the professional and amateur photographer.

No. 1.— 8-inch, \$1.00 each.

No. 2.—12-inch, 1.50 “

THE NEW 8¼-INCH STATIONARY ACME BURNISHER.

FINEST SMALL BURNISHER MADE.

A practical, small machine, for Professional and Amateur use. Burnishes 8 x 10 and all under sizes. Heated with gas or oil, and in three to five minutes. No spoiled prints. Thermometer attached. Upper roll milled or engraved, and hollow. Flue heating. No soot or dirt.

ASK YOUR DEALER TO SHOW YOU THE 8¼-INCH ACME.

(PATENTED FEBRUARY 28, 1887.)

Price, with Gas or Oil, \$10.00.

THE NEW ACME FLUE-HEATING STATIONARY PHOTO BURNISHER.

The Best Stationary Tool Burnisher Ever Made. The Only Flue Heating Burnisher Made.

THE THERMOMETER indicates precisely the degree of heat best adapted for your work, and places spoiled prints among the impossibilities. It is absolutely necessary to have a stated and uniform temperature daily to secure uniform results, and this is impossible with any other machine.

THE POLISHING TOOL has a convex surface which reduces the friction to a minimum, and prevents dust from lodging on its surface. It is made of polished chilled iron of extreme hardness and its position can be changed to present a new polishing surface in a moment if desired.



THE HOLLOW CONSTRUCTION OF THE FEED ROLL does away with all moisture so annoying and injurious in all other burnishers.

THE PRESSURE is regulated by a single hand wheel from one point. The tension is positive and alike at both ends, and invariable the length of the tool, so that it will burnish the thinnest cards in any size without danger of being spoiled.

THE MILLED OR ENGRAVED FEED ROLL is a great improvement over draw-filed rolls. The prints cannot stop in the burnisher. It gives a desirable finish to the back of the mount and never becomes uneven, as in the case of all draw-filed rolls.

The ACME is full nickeled and interchangeable in all its parts, and by reason of its simplicity, excellence of material and special construction, will outwear any other burnisher.

PRICE LIST

8-inch, with gas or oil.....	\$10 00	21-inch, with gas or oil.....	\$55 00
11 " " " "	25 00	26 " " " "	65 00
15 " " " "	35 00		

FELT BACKGROUNDS.

The Scovill & Adams' Plain Felt Backgrounds, recently introduced, is a great boon to all Photographers, both Professional and Amateur.

It is made of strong, thick and even stock, and is of an agreeable neutral drab color. It is especially suitable for vignetting. The texture of the cloth absorbs instead of reflecting light, and thus produces soft effects, and agreeable depth in print. The liability of defacement by water stains is obviated.

The prices of these grounds are as follows :

4 x 6 feet	\$2 50
5 x 6 "	2 75
6 x 6 "	3 00
6 x 7 "	3 50
6 x 8 "	4 00

These sizes may be sent by mail on receipt of 35 cents extra.

VULCANITE TRAYS.

4 x 5.....	\$0 50
5 x 7.....	60
5 x 8	70
7 x 9.....	85
8 x 10.....	1 15
10 x 12. ..	1 75

GLASS PANS.

4½ x 5½.....	\$0 28
5½ x 8½.....	38
7 x 9	65
8½ x 10½.....	75

"The Developer of the Future."

"P A R A."

Para-amidophenol Hydrochlorate.

With "Para" Developer there is no staining of the film, as with eikonogen and hydrochinon when development is prolonged, absolute transparency and opacity is secured, and the time of exposure is reduced about 30 per cent. without injury to half-tones and middle-tints.

Formula for Developer.

Para-amidophenol (pure).....	100	grains
Sodium sulphite (crystals)....	8	ounces
Potassium carbonate.....	1½	ounces
Water.	32	ounces

For use, take 1 ounce of the above solution and from 2 to 4 ounces of water, according to the length of exposure.

The stronger the solution the greater the intensity of the resulting negative; the more diluted the solution the greater softness and more detail.

Pure Para-amidophenol Hydrochlorate.

PRICE, in ½ ounce bottles, - - - - - **65c. per Bottle.**

S. P. C. "PARA" DEVELOPER IN ONE SOLUTION.

An eight (8) ounce bottle containing developer sufficient for developing one hundred 5 x 8 negatives.

PRICE, - - - - - **50 Cents.**

HARD RUBBER PLATES.

FOR SQUEEGEEING PRINTS UPON.

		$\frac{1}{16}$ in. thick.			$\frac{1}{16}$ in. thick.
4	x 5	10 cents each.	8	x 10	40 cents each
5	x 7	18 "	10	x 12	60 "
5	x 8	20 "	11	x 14	75 "
6 $\frac{1}{2}$	x 8 $\frac{1}{2}$	30 "			

SQUEEGEES.

6 inches, each	\$0 40
8 " "	50
12 " "	75

—S. P. C.—

JAPPANED DEVELOPING TRAYS

(Made of Selected Metal)

—FOR—

DRY PLATE PHOTOGRAPHY.

Size 4 $\frac{1}{2}$ x 5 $\frac{1}{2}$ inches	price each, 20 cents.
" 5 $\frac{1}{2}$ x 8 $\frac{1}{2}$ "	25 "
" 7 x 9 "	30 "
" 8 $\frac{1}{2}$ x 10 $\frac{1}{2}$ "	40 "

IMPROVED PAPIER MACHE TRAYS,

THE COATING OF WHICH IS SUPERIOR TO ANY GOODS OF THIS CLASS YET PUT UPON THE MARKET.

PRICE LIST PAPIER MACHE TRAYS.

No. 1, for 8 $\frac{1}{4}$ x 4 $\frac{1}{4}$ plates, each	\$0 25
" 2, " 4 x 5 "	30
" 3, " 5 x 7 "	50
" 4, " 5 x 8 "	55
" 5, " 7 x 9 "	70
" 6, " 8 x 10 "	1 00
" 7, " 10 x 12 "	1 50
" 8, " 12 x 14 "	2 00
" 9, " 14 x 18 "	2 75
" 10, " 16 x 20 "	3 25
" 11, " 19 x 24 "	5 50
" 12, " 23 x 27 "	6 50
" 13, " 26 x 30 "	7 50
" 14, " 28 x 34 "	8 50

SCOVILL'S GLOSSY RUBBER TRAYS.



After a protracted and costly series of experiments, we are now able to offer to the trade, a superior article in texture, durability and polish. The utility of the parallel ridgelets must at once be apparent to the photographic practitioner.

PRICE LIST.

	Size.		Price, Each.
No. 200,	$4\frac{1}{4}$ x $5\frac{1}{2}$	for 1-4, 4-5, and $4\frac{1}{4}$ x $5\frac{1}{2}$ plates.....	\$0 38
" 300,	$5\frac{1}{2}$ x $8\frac{1}{2}$	for 5 x 7 and 5 x 8 "	56
" 400,	7 x 9	for $6\frac{1}{4}$ x $8\frac{1}{4}$ "	72
" 500,	$8\frac{1}{4}$ x $10\frac{1}{4}$	for 7 x 9 and 8 x 10 "	1 08

CELLULOID TRAYS.



	Size.		Price, Each.
$4\frac{1}{4}$ x $5\frac{1}{2}$	For 4 x 5 Plates.....		\$0 50
$5\frac{1}{2}$ x $8\frac{1}{2}$	" 5 x 8 "		72
7 x 9	" $6\frac{1}{4}$ x $8\frac{1}{4}$ "		85
$8\frac{1}{4}$ x $10\frac{1}{4}$	" 8 x 10 "		1 15

The Acme Glass Bottom Reservoir Trays

FOR DEVELOPING DRY PLATES.



These Trays enable the operator to develop a plate without removing it from the solution until fully developed.

The Acme Trays are made of Walnut, with Glass Bottoms, and Receptacle at one end to hold the solution while looking at the plate. They also have buttons adhering to the glass to prevent suction.

The Acme Trays are superior to all others in respect to cheapness, durability and cleanliness. They are lined with acid proof cement, and warranted not to leak.

PRICES FOR TRAYS WITH RESERVOIR TO DEVELOP.

5 x 7 Plate and smaller.....	\$1 00	6½ x 8½ Plate.....	\$1 25
5 x 8 ".....	1 20	8 x 10 ".....	1 80
20 x 24 Trays for silvering whole sheets, without reservoir, but with double thick glass bottom.....			
			5 00

HYDROCHINON CAPSULES.

(DRY DEVELOPER)

Light, Compact—Just the thing for Tourists.

Price, 60 Cents per Set.

Patent Pending.

An entirely new and practical idea by which a chemically pure DRY DEVELOPER, working admirably on any make of DRY PLATES, can be preserved *unchanged* for any length of time ; transported *by mail* to any part of the country (occupying but a very small space), and used to make any quantity of Developer, without the use of measures or weights of any kind.

Directions for use inside each Box.

SCOVILL Prepared SOLUTIONS. Powders and Capsules.



S. P. C. Eikoquinole Developer.	Price per bottle,	\$0 35
S. P. C. Eikonogen Developer.	Per package,	75
S. P. C. Pyro and Soda Developer.	Price per Package,	60
S. P. C. Hydrochinon Developer.		
Does not stain the fingers or leave the plate yellow; works equally well with all brands of plates, giving perfect detail, density and brilliancy in the negative. Full directions enclosed in each package.		
	Price, per package,	60
S. P. C. Pyro and Potash Developer.		
	Price, per package,	60



S. P. C. Bromide Paper Developer		
for Star Bromide Paper. Set,		75
S. P. C. Restrainer.	In accurate dropping bottle,	50
S. P. C. Developing Powders.	Per box of 12,	50
Hydrochinon Capsules,	per box,	60

SCOVILL PREPARED SOLUTIONS, POWDERS, &c.



S. P. C. Clarifying Solution. Per bottle, \$0 50

S. P. C. Reducing Solution. Small bottle, . . . 50

Large bottle, . . . 75

Reduces density in negatives and positives on glass or paper. Can be applied locally to remove halation marks, ghosts, etc.

S. P. C. Hypo Eliminator. (For Removing every trace of Hyposulphite of Soda from Negatives and Prints.) Price, per bottle, with book of testing paper, . . . 50

S. P. C. Retouching Fluid. (For Varnished and Unvarnished Negatives.) Price, per bottle, . . . 25

Magnesium Flash Compound, oz. bottle, . . . 50

Hall's Intensifier. (For Strengthening Weak Negatives.) Price, per bottle, . . . 75



S. P. C. Negative Varnish. . . . Per bottle, 35

French Azotate. (For Toning Prints.) " " 25

Kristaline Varnish, . . . " " 40

S. P. C. Toning Solution. Per package, . . . 1 00

Produces the most brilliant tones, ranging from chocolate to black on ready-sensitized paper.

S. P. C. Orthochromatic Solutions.

By which any plate may be rendered color-sensitive.

Price, per package, . . . 1 50

DEVELOPERS AND CHEMICALS IN SOLUTION

TRANSPORTED SAFELY IN

CORRUGATED PROTECTING CASES.

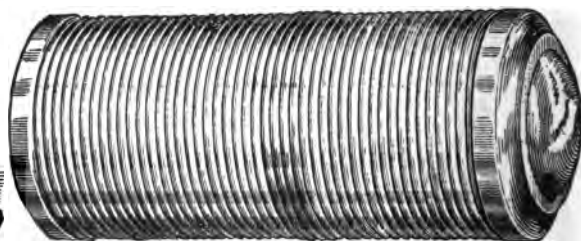


Supplied with Out Glass Bottles, and Graduated
Tumbler to Measure Liquids.

CORRUGATED PROTECTING CASES are a great convenience to the landscape Photographer and amateur picture-taker when away from home. Though made of thin metal, the corrugation makes them so strong as to resist crushing. Being nickeled and finely finished the external appearance of these Cases is

DECIDEDLY TASTEFUL,

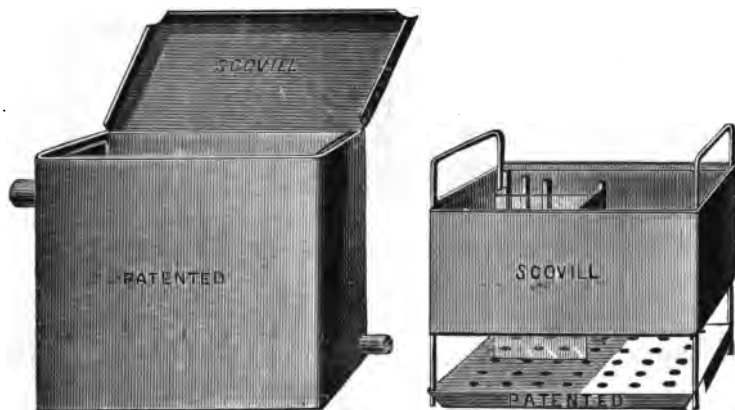
indeed, one would be more inclined to place them in a satchel than in a packing case. Whether carried about in a horizontal or vertical position, the locking ring affords perfect protection for the liquids contained in the bottle.



		Each.
No. 1.	Diameter, 1½ in. Length, 8½ in. Weight, 4½ oz. Furnished with 1 ounce bottle.....	.50
No. 3 A	Diameter, 2 in. Length, 5½ in. Weight, 7½ oz. Furnished with 4 oz. bottle, with tumbler, making ½ pint flask.....	.85
No. 4 A	Diameter, 2½ in. Length, 7 in. Weight, 14 oz. Furnished with 8 oz. bottle, with tumbler, making ½ pint flask.....	1.10
No. 13 A	Diameter, 2¾ in. Length, 6 in. Weight, 17 oz. Furnished with 8 oz. bottle, with tumbler, making ½ pint flask.....	1.20

THE SCOVILL Negative Washing Boxes.

(PATENTED.)



The Scovill Negative Washing Boxes are all now made adaptable and so that plates may be taken out without putting the fingers in the washing water. (See illustration.) The perforated bottom prevents water from passing through the box with too great force, and distributes it so that every plate and every portion of a plate is equally washed, and this cannot be done with any other washing box.

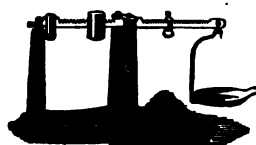
PRICE LIST.

(ADAPTABLE).				EACH
For $8\frac{1}{4}$ x $4\frac{1}{4}$ Plates.....				\$1 60
" 4 x 5 " and smaller sizes.....				1 75
" $4\frac{1}{4}$ x $5\frac{1}{2}$ " " "				1 90
" $4\frac{1}{4}$ x $6\frac{1}{2}$ " " "				2 00
" 5 x 7 " " "				2 10
" 5 x 8 " " "				2 15
" $6\frac{1}{2}$ x $8\frac{1}{4}$ " " "				2 25
" 8 x 10 " " "				2 50
" 10 x 12 " " "				4 00
" 11 x 14 " " "				5 00
" 14 x 17 " " "				6 00

{ **8x10 ADJUSTABLE WASHING BOX..... 4 00**
Adjustable for $6\frac{1}{2}$ x $8\frac{1}{4}$, 5x8, 5x7, 4x5, $3\frac{1}{4}$ x $4\frac{1}{4}$ Plates. *All sizes to be washed at once.*

FAIRBANKS'

Photographer's Scale.



NEW PATTERN, $2\frac{1}{4}$ INCH PAN.

Half-grain to 8 drams indicated on beam. No weights required.

JAPANNED SCALE, NICKEL-PLATED BEAM, - - \$5.00

THE HALLENBECK

Sensitized Paper and Dry-Plate Safety Box.

Size.										Price.
4 x 5	-	-	-	-	-	-	-	-	-	\$1 00
5 x 8	-	-	-	-	-	-	-	-	-	1 15
$6\frac{1}{2}$ x $8\frac{1}{4}$	-	-	-	-	-	-	-	-	-	1 25
8 x 10	-	-	-	-	-	-	-	-	-	1 50
19 x 23	-	-	-	-	-	-	-	-	-	4 50

These boxes are provided with lock and key, and with weighted inside lid to keep paper flat.

DRAWING-ROOM TRANSPARENCY FRAMES.

These Frames can be described, or characterized by one phrase, "THE REFINEMENT OF TASTE."

SIZE	EACH.	SIZE.	EACH.
4 x 5 inch.....	\$0 28	6½ x 8½ inch.....	\$0 88
4½ x 6½ "	30	6½ x 9 "	48
5 x 7 "	30	8 x 10 "	48
5 x 8 "	34	10 x 12 "	75
6½ x 7½ "	38	11 x 14 "	90



SCOVILL'S ETCHED GROUND GLASS

(WITH HANDSOME DESIGNS ON BORDER), FOR TRANSPARENCIES.

6½ x 7½ for 4 x 5 Picture.....	Per light, 28	cts.
6½ x 9 " 4½ x 6½, 5x7, and 5x8 Picture.....	"	48 "
8 x 10 " 6½ x 8½ Picture.....	"	50 "
10 x 12 " 8 x 10 "	"	68 "

Plain Ground Glass for Transparencies.

Per Light.	Per Light.	Per Light.
4 x 5.....\$0.12	5 x 8.....\$0.18	8x10.....\$0.85
4¼ x 5½..... 15	6½ x 9½..... 28	10x12..... 50
4¼ x 6¼..... 16		11x14..... 1.00

THE Acme Sciopticon

ACME SCIOPTICON,
Complete with Double Slide Carrier,
\$30.



After experimenting with most of the lanterns in the market, we have come to the conclusion that for parlor or small hall exhibitions, chemical and optical experiments, etc., the ACME LANTERN affords at a moderate price, the greatest number of advantages, and from its simplicity and non-liability to get out of order, gives, even in inexperienced hands, results superior to all others.

The ACME SCIOPTICON when packed for carrying, in its own Russia iron case, measures 15 x 10 x 6 inches, and weighs 12 pounds: the case serving as a convenient stand when the lantern is in use.

The CASE and BODY of the Lantern are of Russia iron, and neat and compact in form. That part of the body which surrounds the lamp is double, the outer cover being ornamentally perforated so as to allow a constant current of air to circulate and keep down the temperature.

The lamp is of the triple wick variety, and so constructed that the three flames combine and by the draught of a ten-inch chimney give a brilliant flame.

The CONDENSER is four inches in diameter, neatly mounted in brass, thoroughly ventilated, and arranged with screw flange so that the lenses may be separated and cleaned when required.

The CONE, which carries the objective, and the mount of that lens are nickel-plated. The objective is a double achromatic lens of one and a half inch clear aperture and five-inch focus, so that at a distance of twelve feet from the screen, it gives a brilliant picture on disc six feet in diameter. The focus is roughly obtained by sliding the front, carrying both cone and lens; and fine adjustment by a rack and pinion on the objective.

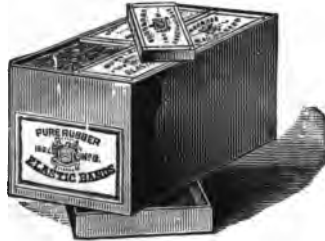
"ALPHA" FINGER-TIPS.

This very useful article comes in a nest of three finger-tips of assorted sizes, put up in a neat paper box ; **Price, 15 cents.**

These goods are made of pure gum rubber, and being very thin and pliable do not draw the fingers, while they protect them entirely from the stains of various photographic solutions.

RUBBER BANDS.

Eighteen gross, $1\frac{1}{2}$ inch bands in a $\frac{1}{4}$ lb. box. Put up nicely in $\frac{1}{4}$ lb. boxes. Use them instead of twine. 2,500 bands (count 'em) in a $\frac{1}{4}$ lb. box.
 Per $\frac{1}{4}$ lb. box.....\$1 00
 Per 1 oz. box..... 30



THE "ALPHA" CABINET.

PURE RUBBER ELASTIC BANDS.



Choice assortment for Amateur Photographers, of Pure Rubber Bands—over 500, in eleven sizes, from one to three inches long, and from one-sixteenth to one-half inch in width. It also contains an "Ink Shield" for the pen, which not only saves your fingers, but your desk, books and paper.

Price complete, each, \$1.25.

Egyptian Chemical Colors.

TRIPLE STRENGTH.



No. 1.

No. 2.

We take pleasure in calling your attention to the

Egyptian Chemical Colors,

PREPARED EXPRESSLY FOR COLORING PHOTOGRAPHS, EITHER ON PLAIN OR ALBUMENIZED PAPER.

These Colors are something new and far superior to anything of the kind heretofore used by photographers and others for the above purpose. The art of using them is so simple that the most inexperienced person can color photographs with entire satisfaction. Photographers who have tested these Colors say that the **Blue, Brown, Rose and Flesh Colors** are indispensable and worth the price of the whole set. Each bottle is labeled with full instructions for their use and how to obtain good effects. Burnishing the photograph after it is colored does not in the least disturb the colors, but softens down and improves them.

A box of these Colors by careful usage ought to color three thousand photographs.

These Colors are put up in polished wooden boxes labeled "Egyptian Chemical Colors."

BOX No. 2 contains 9 half oz. bottles of the following Colors: Lemon Yellow, Dark Emerald Green, Orange or Gold Color, Blue, Dark Brown, Rose, Violet and Flesh. Price, \$2.00.

BOX No. 1 contains fourteen 1 ounce bottles of the following colors: *Dark Emerald Green, Orange or Gold Color, Blue, Dark Brown, Rose, Violet, Flesh, Lemon Yellow, Magenta, Salmon, Vermillion, Terra Cotta, Maroon Brown, Transparent Black, including a 4 ounce Bottle of the Egyptian Transparent Compound.*

PRICE, \$6.00.

Separate bottles of Colors and Compound can be obtained.

The Egyptian Transparent Compound.

This article is a transparent Cement, used in connection with the above Colors, for adhering to flat or convex glass a colored unmounted photographic print. **Price, per bottle, 75 cents.**

THE ADT Patent Manipulator.



The combined features of this Device make it an indispensable contrivance for the Dark-Room.

ADAPTABLE FOR VARIOUS SIZE TRAYS.

As will be seen by a glance at the cut, this device not only protects the hands in lifting the plate from the developer, but as they do not come in contact with the tray, stained fingers are entirely avoided.

It not only prevents soiling the hands, but will be found a great aid in manipulating the plate.

It is attachable to and will firmly hold various sizes and depths of trays without adjusting.

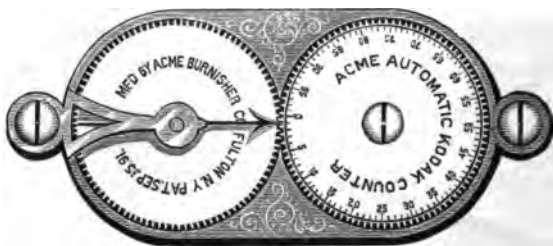
The lifter is of German Silver, flattened at the end, thus requiring no extra amount of developer.

They are strongly made and heavily nickel-plated throughout

Price, 60 Cents Each.

ACME

AUTOMATIC KODAK COUNTER.



[Patented September 15, 1891.]

WHY SHOULD ALL KODAKERS USE THEM? BECAUSE

They keep the tally of exposures made.

They are automatic.

They need no attention whatever.

Any one can attach them in a moment.

They require no fitting at all.

They are an ornament to every Kodak.

They are guaranteed in every particular.

They cannot get out of order.

They are the perfection of simplicity.

THEY COST ONLY:

No. 1—All regular sizes of Kodaks, - - - -	\$2 00
No. 2—All Junior Kodaks, - - - -	2 00

REQUISITES

FOR

FILM PHOTOGRAPHY.

THE SCOVILL DOUBLE FILM HOLDERS are so much smaller, thinner and lighter than holders made for glass plates, that when first exhibited they were dubbed by some facetious individual "pancake holders." With old cameras an "Adapter" should be used, because we do not make these new holders as large as glass plate holders. These Adapters, with ground-glass, are supplied at the same list price as the Scovill Double Film Holders, which are listed as follows :

Scovill Double Film Holders.

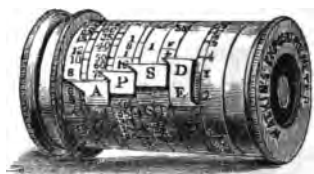
8½ x 4½	\$1 10
4 x 5	1 25
4½ x 5½	1 25
4½ x 6½	1 25
4¾ x 6½	1 30
5 x 7	1 30
5 x 8	1 40
6½ x 8½	1 70
8 x 10	2 00

Films may also be used with Daisy, Light Weight—Scovill Patent—and Flammang Holders, by placing in them Scovill Film Carriers, which are listed as follows :

Scovill Film Carriers.

8½ x 4½	\$0 10
4 x 5	10
4½ x 5½	11
4½ x 6½	15
5 x 7	17
5 x 8	22
6½ x 8½	26
8 x 10	30

THE WATKINS EXPOSURE METER.



IN ENGLAND.

PATENTED.

IN AMERICA.

PRICE.

With one Exposure Ribbon and Book of Tables.....	\$5 00
Extra Exposure Ribbons, each.....	25
Copy of Exposure Notes.....	50

This instrument works splendidly for very difficult subjects and all daylight camera exposures, and is a thorough, practical success.

A special instrument, with an extra calculating ring F, is now supplied. This instrument is invaluable for copying and enlarging, as it takes into consideration the focus, whilst at the same time it can be used for any ordinary purpose without reference to this addition.

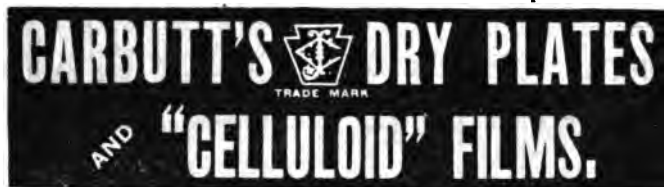
Price, complete, \$6.00.

By far the cheapest and only reliable meter ever invented.

DRY PLATES.

We supply plates of the following standard brands: Carbutt, Keystone, Harvard, Cramer, Seed, Wuestner's Eagle, and Stanley, at the market prices, and call especial attention to the price list and formula of the various reliable plates made by the veteran John Carbutt, on the following page.

REDUCED PRICE LIST, JANUARY, 1891.



SIZE OF PLATES.	"Eclipse," "Special," "A," "B," and Orthochromatic Plates.	Stripping Plates. — "Special," Sen. 23 to 25, kept in stock. Other brands to order.	Ground Glass Transparency, Plates. — "A" Emulsion.	Plain Opal Plates. — Coated with "A" Emulsion.	Ground Opal Plates. — Coated with "A" Emulsion.	Size of "Celluloid" Films for Negatives, coated with "B," Special, Eclipse, or Ortho. Emulsion; for Positives with "A" Emulsion.	PRICE OF "Celluloid" Films. Negative and Positive.
	Doz.	Doz.	Doz.	Doz.	Doz.		Doz.
2 1/8 x 2 1/8	\$0 30	....	....	....	....	3 1/4 x 4 1/4	\$0 55
2 1/8 x 2 1/8	35	....	....	....	....	4 x 5	80
2 1/8 x 4	45	....	....	....	....	4 1/4 x 5 1/2	90
3 1/4 x 4 1/4	65	\$0 90	\$0 70	\$0 55	\$0 60	4 1/4 x 6 1/2	1 10
4 x 5	75	1 00	95	1 00	1 15	4 1/4 x 6 1/2	1 20
4 1/4 x 5 1/2	90	1 20	1 15	1 20	1 45	5 x 7	1 40
4 1/4 x 6 1/2	1 00	1 25	....	....	....	5 x 7 1/2	1 50
4 1/4 x 6 1/2	1 10	1 45	1 40	1 50	1 80	5 x 8	1 55
5 x 7	1 25	1 65	....	....	....	6 1/2 x 8 1/2	2 10
5 x 7 1/2	1 25	1 65	1 60	1 70	2 25	8 x 10	3 00
5 x 8	1 25	1 65	1 60	1 70	2 25	10 x 12	4 75
6 1/2 x 8 1/2	1 65	2 20	1 15	1 20	1 45	11 x 14	6 25
8 x 10	2 40	3 20	1 65	1 75	2 15		
10 x 12*	3 80	5 05	2 50	2 65	3 25		
11 x 14	5 00	6 65	3 20	3 50	4 20		
14 x 17	9 00	12 00	5 50	6 00	7 00		
16 x 20	12 50	16 65	....	....	....
17 x 20	13 00	17 30	....	....	....
18 x 22	15 50	20 00	....	....	....
20 x 24	18 50	24 50	....	....	....
"Celluloid" Films for the Moessard Panoramic Camera.							
8 x 28 Cm.....	\$1 30	24 x 84 Cm.....	\$12 15				
12 x 42 ".....	3 20	28 x 98 ".....	17 60				
16 x 50 ".....	4 90	32 x 112 ".....	23 00				
20 x 70 ".....	8 50						

* 10 x 12 and larger are in 1/2 dozen boxes.

CIRCULAR INSTANTANEOUS PLATES FOR CONCEALED CAMERA.

Per doz., 5 1/2 inch diam, \$1.10; 6 1/2 inch diam., \$1.50.

CARBUTT'S LANTERN PLATES 55 cts. PER DOZEN.

On Specially Imported THIN CRYSTAL GLASS, Size 3 1/4 x 4.

French Measure.		
PLATES AND FILMS.		
Centimeter.	Plates.	Films.
9 x 12	\$0 60	\$0 80
12 x 16	95	1 15
12 x 16 1/2	1 00	1 20
13 x 18	1 10	1 40
12 x 20	1 25	1 50
18 x 24	2 20	2 85
21 x 27	2 85	3 10
24 x 30	3 80	4 30
27 x 33	4 50	4 95

BRANDS AND SENSITOMETER NUMBERS.



- "ECLIPSE," Sen. 27.**—Is extremely sensitive, and specially intended for quick studio exposures, concealed and detective cameras, instantaneous views, and magnesium flash-light photography.
- "SPECIAL," Sen. 23 to 25.**—For portraits, instantaneous views, outdoor groups, etc. *Blue Label.* This plate and our Ortho, Sen. 23 to 25, are the best plates for professionals and view work.
- "ORTHOCHROMATIC" Plates, Sen. 23 to 27,** give correct color values. The best plates for landscapes, interiors, **photo-micrography**, portraiture in varied-colored draperies, photographing paintings, flowers, etc.
- "B" Plates, Sen. 16 to 20.**—For landscape views and general photography. Admittedly the finest plate for professional and amateur all-around work.
- "B" PROCESS Plates, Sen. 12.**—For use by photo-lithographers, photo-engravers, and zinc etchers in making intense and clear-line negatives.
- "A" GELATINO-ALBUMEN Plates.**—For lantern slides and copying.
- "A" GELATINO-ALBUMEN GROUND GLASS Plates,** specially prepared for window transparencies.
- STRIPPING PLATES.**—For photo-mechanical printers. Emulsions "B" 20 and "Special" 23 to 25, kept in stock. "Eclipse" 27 made to order.
- "CELLULOID" FILMS—TRANSPARENT**—Emulsion "B," Sen. 12, for producing intense negatives for photo-reproductive processes.
- "CELLULOID" FILMS—MAT-SURFACE.**—Emulsions "Eclipse," Sens. 26 and 27; "Orthochromatic," Sens. 23 to 27; "Special," Sens. 23 to 25; "B," Sens. 16 to 20.

CORRECT WORKING FORMULA IN EVERY PACKAGE.

CARBUTT'S SPECIALTIES.

Yellow Color Screens, for use with Orthochromatic plates, made of two cemented plate-glass; sizes $2\frac{1}{2} \times 2\frac{1}{2}$, 75 cts.; $3\frac{1}{2} \times 3\frac{1}{2}$, each.	\$1 00
Eiko-cum-Hydro Two-Solution Developer, two 8-oz. bottles.....	60
"Roxylene" Enamel, for varnishing Positives, Transparencies, and Negatives Used cold. 8-oz. bottle.....	75
Multum in Parvo Dry Plate Lantern.....	6 00
Keystone Dry Plate Varnish, 8-oz. bottle.....	50
Translucent Ruby Paper, 25 x 20, 25 cts.; by mail.	30
Concentrated Pyro and Soda-Potash Developer, two 8-oz. bottles in one case.....	60
Lantern Slide Mats, with gilt line around opening, per 100.....	1 00
Adhesive Binding Strips for Slides, per 100.....	20
Thin Crystal Cover Glass, $3\frac{1}{4} \times 4$, per dozen. (Subject to change.)	35

INSTRUCTIONS AND FORMULA FOR Carbutt's Keystone Dry Plates.

SPECIAL PORTRAIT AND INSTANTANEOUS.

Blue Label; Sensitometer 23 to 25.

PRONOUNCED THE NE PLUS ULTRA OF DRY PLATES.

B—Landscape and Copying.

White Label; Sens'r 16 to 20.

A—Gelatino-Albumen for Transparencies.

Red Label; Sens'r 12 to 14.

ORTHOCHROMATIC PLATES, Normal Sens'r 20 and 25; Color Sens'r 30 and 40.

No. 1. PYRO SOLUTION.

Distilled or Ice Water.....10 oz.
Sulphite of Soda Crystals 4 oz.
Dissolve and add slowly.
Sulphuric Acid..... 1 drachm.
Pyrogallie Acid, Schering's 1 oz.
And Water to make 16 oz. fluid.

No. 2. ALKALINE SOLUTION.

Water, Distilled, or Melted Ice.....10 oz
Granulated Carbonate of Soda..... 3 oz
Granulated Carbonate of Potash..... 1 oz
Yellow Prussiate of Potash..... 1 oz
Dissolve, add Water to make measure 16 oz

[During Hot Weather, add to No. 1, 20 grains Bromide of Potassium.]

BROMIDE SOLUTION.—Bromide Potass. 1 part, Water 9 parts.

TO DEVELOP.

For Portraits on "Special Instantaneous," to 4 ounces of water add 3 drachms No. 1, and 2 drachms No. 2, and if plate has had proper exposure, the above developer will be found to yield a soft and rich printing negative. More of No. 2 to be added if under-exposed, and more of No. 1 with a few drops of Bromide Solution if over-exposed.

For Landscapes and Interiors on "Specials," where the exposure may be uncertain, lay the exposed plate in the Pyro Solution for a minute or two, then into the developing glass put half the quantity of No. 2 as has been taken of No. 1, and pour the Pyro Solution into it, and back on to the plate. By proceeding in this manner, adding more of No. 2 to bring out the image, or a few drops of a 10 per cent. solution of bromide to restrain, as may be required, much better results may be looked for than if a full quantity of No. 1 and No. 2 were mixed at once. For INSTANTANEOUS VIEWS or very dark interiors, we recommend the following procedure: To 4 ounces water add 1 dram No. 2, soak plate in this while preparing the following: water, 3 ounces, of Nos. 1 and 2 each 3 drams, 5 drops Bromide Solution, pour off the dilute alkali, and flow this strong developer over the plate; be careful to expose the plate as little as possible to the light used to develop by, no matter how safe it may be considered for ordinary development. Do not hurry by adding more No. 2; cover up the pan and give the developer time to act, when more of No. 1 or No. 2 may be added as required. For INSTANTANEOUS MARINE VIEWS, it will be best to treat the plate same as for Landscapes, by soaking plate in Pyro Solution first.

For Landscape, Machinery, Architecture, &c., on B plates, use $\frac{1}{2}$ drachm each Nos. 1 and 2 to each ounce water, adding more of each as may be required. No. 1 giving density, No. 2 giving detail and hastening development.

After washing off developer, immerse in following:

HARDENING AND CLEARING SOLUTION.

Water..... 36 oz. | Citric Acid $\frac{1}{4}$ oz.
Chrome Alum..... $\frac{1}{2}$ oz.

8 to 5 minutes then wash and place in the

FIXING SOLUTION.

Hyposulphite of Soda... 8 oz. | Water... 40 oz.

LANTERN TRANSPARENCIES

AND HOW TO MAKE THEM.

The requisites are : a deep printing frame a size larger than the negative to be used, with a flat glass bottom clear and free from scratches (crystal plate is best), a Carbutt Multum in Parvo Lantern, or other artificial light, and Keystone Gelatino-Albumen Plates. Transparencies can be made same size of negative by contact and exposure to artificial light, or enlarged or reduced in the camera by daylight, with equal perfection in result. To make Lantern Slides by contact, place one of the Keystone thin crystal glass transparency plates over the negative in printing frame, lay piece of dark soft material over it, close down the back, and expose to the *clear* light side (by opening the *left* hand door) of a Multum in Parvo Lantern or other light, for 10 to 30 seconds, according to density of negative, at a distance of 20 inches from the flame. Use the following developer :

CARBUTT'S IMPROVED DEVELOPER FOR TRANSPARENCIES.

A.	
Oxalate of Potash.....	8 oz.
Water.....	30 oz.
Citric acid.....	60 gr.
Citrate of ammonia solution.....	2 oz.

B.	
Sulphate of iron.....	4 oz.
Water.....	32 oz.
Sulphuric acid.....	16 drops.

C.	
Citrate of ammonia solution.	
<i>Dissolve 1 oz. citric acid in 5 oz. distilled water, add liquor ammonia until a slip of litmus paper just loses the red color, then add water to make the whole measure 8 oz.</i>	

DEVELOPER.—Add 1 oz. of B to two of A, and $\frac{1}{4}$ oz. of water, and 3 to 6 drops of bromide solution.

Let the development continue until the blacks look quite strong, and detail plainly showing in the high lights ; wash off developer thoroughly before fixing, use fresh hypo solution, when fully cleared wash for half hour, then immerse five minutes in the Hardening Solution given below ; afterwards wash for half hour, then carefully go over surface with soft camel's-hair brush, or pledget of cotton to remove any particles of dirt ; place in rack to dry. Then varnish with plain Collodion.

COLLODION VARNISH.

Alcohol.....	4 oz.	Sulphuric ether.....	4 oz.
Pyroxyline.....	30 to 40 gr.		

When, after shaking, the cotton is dissolved, filter and flow the plain Collodion over the dry transparency, the same as when using varnish ; when dry, cover with matt and a crystal cover glass, and bind with binding strip.

HARDENING AND CLEARING SOLUTION.

Water.....	36 oz.	Citric acid.....	$\frac{1}{4}$ oz.
Chrome alum.....	$\frac{1}{4}$ oz.		

3 to 5 minutes, then wash and place in the

FIXING SOLUTION.

Hyposulphite of soda	8 oz.	Water	40 oz.
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GENERAL PRICE LIST.

Chemicals subject to Fluctuation in Prices.

Glass Forms, Stereo.....each, \$0 40	Glass Forms, 4 x 5.....each, \$0 50
Card Glass Forms....." 25	" " 5 x 8....." 75
Cabinet "....." 50	" " 6½ x 8½....." 1 00
Straight Trimmers....." 20	
Revolving "....." 30	
Scovill Focusing Cloths....." 50	
" Printing Frames, flat, 8½ x 4½....." 36	
" " " 4 x 5....." 38	
" " " 4½ x 5½....." 40	
" " " 4½ x 6½....." 42	
" " " 5 x 7....." 50	
" " " 5 x 8....." 52	
" " " 6½ x 8½....." 60	
" " " 8 x 10....." 75	
Neutral Oxalate Potash.....per lb., 35	
Protosulphate Iron.....per lb., 14	
Sulphate Iron and Ammonia.....per oz., 15	
Oxalic Acid.....per oz., 10	
Citric Acid....." 15	
Bromide Ammonium....." 12	
" Potassium....." 12	
Iodide "....." 30	
Nitrate Uranium....." 85	
Red Prussiate Potash....." 15	
Litmus Paper.....per sheet or book, 5	
".....per box, 50	
Carbonate Soda, Granular.....per lb., 10	
Pyrogallic Acid.....per oz., 35	
Sulphuric Acid, in bottle and tin can....." 20	
Bichloride Mercury....." 15	
Chloride Ammonium....." 10	
Liquid Ammonia, conc.....per lb., 32	
Hyposulphite Soda....." 10	
Alum, Ground....." 10	
Chrome Alum (commercial) in box....." 25	
India Ink (for stopping out).....per stick, 20	
Gihon's Opaque.....per cake, 50	
French Azotate (for toning).....per bottle, 25	
Chloride Gold and Sodium.....per bottle of 15 grains, 35	
" " " ".....80 " 55	
S. P. C. Negative Varnish.....per bottle, 35	
Parlor Paste (for mounting pictures).....½ pint jar, 25	
" " ".....pint bottle, 35	
" " ".....quart jars, 75	
Acetate Soda.....¼ lb. bottles, 20	
Ground Glass Substitute.....per bottle, 50	
Dropping Tubes.....each, 10	
W. I. A. Petite Lantern....." 1 25	
Peerless Lanterns....." 2 50	
Keystone Lantern Slide Mats.....per 100, 1 00	
" " Binders.....per 100, 20	
Boston " Mats.....per 100, 50	

Photographic Publications.

(Selected from the Scovill Catalogue of Books.)

	Price, Per Copy.
LANTERN-SLIDES, AND HOW TO MAKE THEM. By A. R. DRESSER. A new book, very complete and practical.....	\$0 25
FLASH-LIGHTS, AND HOW TO MAKE THEM. By L. C. BENNETT. A thoroughly practical book, fully illustrated.....	50
BROMIDE PAPER, AND HOW TO USE IT. Written by an Expert, with a specimen Bromide illustration.....	25
THE LIGHTING IN PHOTOGRAPHIC STUDIOS. —By MR. P. C. DUCHOCHOIS, the Eminent Photographic Expert and Chemist, is a pamphlet containing about 100 pages, fully illustrated, and very valuable as a practical help to the professional photographer.....	75
THE PHOTOGRAPHIC IMAGE. By P. C. DUCHOCHOIS. A Theoretical and Practical Treatise of Development. Paper covers, \$1.50. Cloth bound.....	2 00
THE KNACK. —Written expressly to help the beginner in perplexity.....	25
PHOTOGRAPHIC LENSES; THEIR CHOICE AND USE. J. H. DALLMEYER. A special edition, edited for American Photographers. In paper covers.....	25
THE CHEMISTRY OF PHOTOGRAPHY. —By PROFESSOR RAPHAEL MELDOLA.....	2 00
HOW TO MAKE PHOTOGRAPHS. —Sent free to any practitioner of the Art. New edition just out.	
ART RECREATIONS. —A guide to decorative art. Ladies' popular guide in home decorative work. Edited by MARION KEMBLE.....	2 00
THE FERROTYPERS' GUIDE. —Cheap and complete. For the ferrotyper, this is the only standard work. Seventh thousand.....	75
A COMPLETE TREATISE ON SOLAR CRAYON PORTRAITS AND TRANSPARENT LIQUID WATER-COLORS. —By J. A. BARNHART. Practical ideas and directions given. Amateurs will learn ideas of color from this book that will be of value to them. And any one by carefully following the directions on Crayon, will be able to make a good Crayon Portrait.....	50
ART OF MAKING PORTRAITS IN CRAYON ON SOLAR ENLARGEMENTS. (Third Edition.) By E. LONG. Price.....	1 00
PHOTOGRAPHY APPLIED TO SURVEYING. Illustrated. By Lieut. HENRY A. REED, U.S.A. Cloth bound.....	2 50
THE PHOTOGRAPHIC STUDIOS OF EUROPE. —By H. BADEN FRITCHARD, F.C.S. Paper.....	50
Cloth.....	1 00
HISTORY AND HAND-BOOK OF PHOTOGRAPHY. —Translated from the French of Gaston Tissandier, with seventy illustrations. Cloth bound, reduced to	75
AMERICAN CARBON MANUAL. —For those who want to try the carbon printing process, this work gives the most detailed information. Cloth bound.....	50
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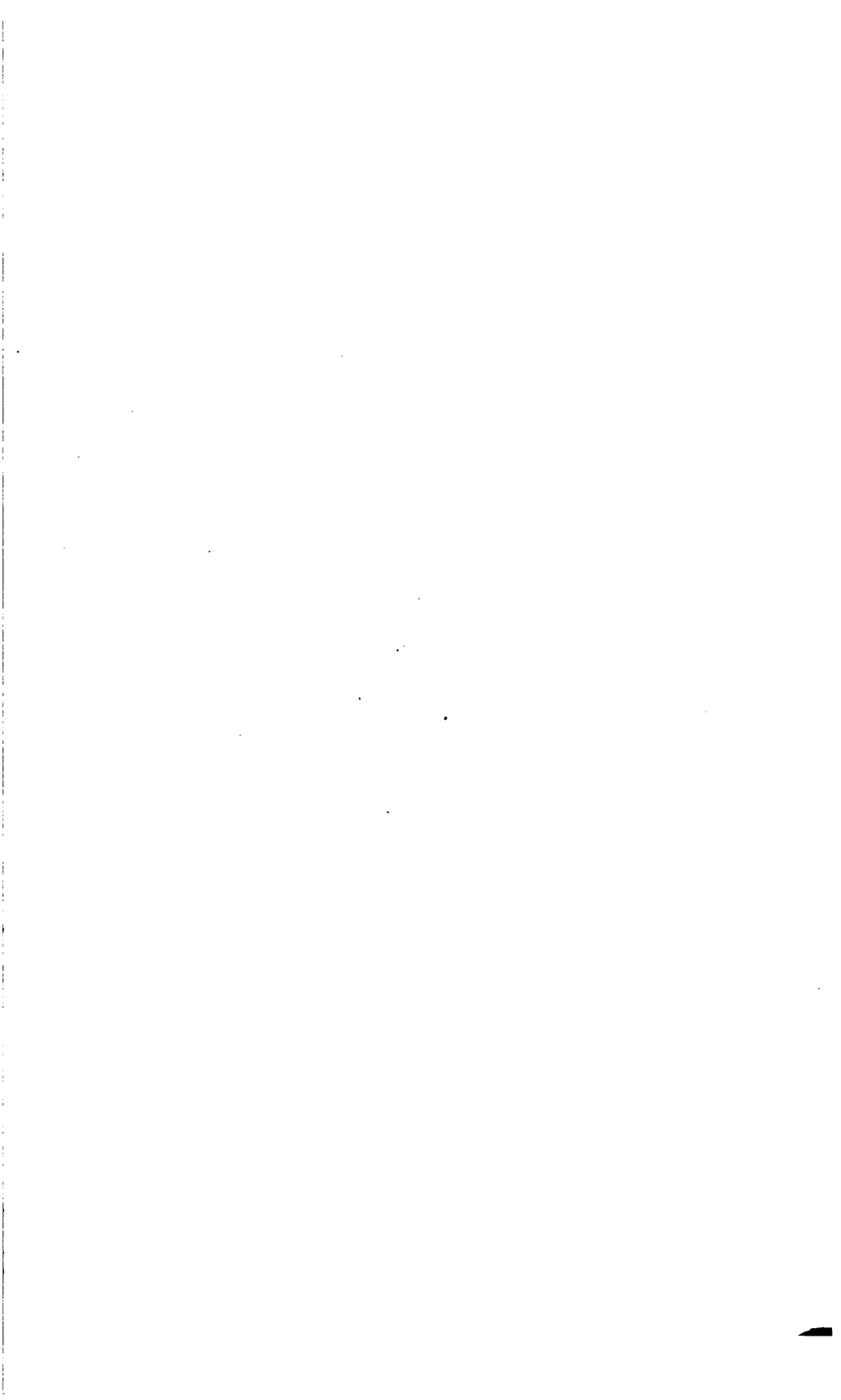
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